FCC Test Report

Equipment	:	AC1750 Wireless Dual Band Gigabit Router
Brand Name	:	tp-link
Model No.	:	Archer C7 , Archer A7
FCC ID	:	TE7C7V5
Standard	:	47 CFR FCC Part 15.407
Operating Band	:	5150 MHz – 5250 MHz 5725 MHz – 5850 MHz
Applicant	:	TP-Link Technologies Co., Ltd. Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park,Shennan Rd, Nanshan, Shenzhen,China
Manufacturer	:	TP-Link Technologies Co., Ltd. Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park,Shennan Rd, Nanshan, Shenzhen,China
Function	:	☐ Outdoor; ☒ Indoor; ☐ Fixed P2P ☐ Client

The product sample received on Oct. 02, 2017 and completely tested on Oct. 25, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Cliff Chang
SPORTON INTERNATIONAL INC.

Testing Laboratory
1190

Table of Contents

Summary of Test Result

Conformance Test Specifications			
Report Clause	**Ref. Std. Clause**	**Description**	**Result**
1.1.2	15.203	Antenna Requirement	Complied
3.1	15.207	AC Power-line Conducted Emissions	Complied
3.2	15.407(a)	Emission Bandwidth	Complied
3.3	15.407(a)	Maximum Conducted Output Power	Complied
3.4	15.407(a)	Peak Power Spectral Density	Complied
3.5	15.407(b)	Unwanted Emissions	Complied
3.6	15.407(g)	Frequency Stability	Complied

Revision History

Report No.	Version	Description	Issued Date
FR792923AB	Rev. 01	Initial issue of report	Nov. 03, 2017
FR792923AB	Rev. 02	Changing the Equipment Name	Nov. 09, 2017

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	a, n (HT20), ac (VHT20)	5180-5240	36-48 [4]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5725-5850		5775	155 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	3TX
5.15-5.25GHz	802.11n HT20	20	3TX
5.15-5.25GHz	802.11ac VHT20	20	3TX
5.15-5.25GHz	802.11n HT40	40	3TX
5.15-5.25GHz	802.11ac VHT40	40	3TX
5.15-5.25GHz	802.11ac VHT80	80	3TX
5.725-5.85GHz	802.11a	20	3TX
5.725-5.85GHz	802.11n HT20	20	3TX
5.725-5.85GHz	802.11ac VHT20	20	3TX
5.725-5.85GHz	802.11n HT40	40	3TX
5.725-5.85GHz	802.11ac VHT40	40	3TX
5.725-5.85GHz	802.11ac VHT80	80	3TX

Note:
- 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40, VHT80use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM, modulation.
- BWch is the nominal channel bandwidth.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

1.1.2 Antenna Information

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)	
					2.4GHz	5GHz
1	TP-LINK	3101501493	Dipole Antenna	I-PEX	3	5
2	TP-LINK	3101501495	Dipole Antenna	I-PEX	3	5
3	TP-LINK	3101501496	Dipole Antenna	I-PEX	3	5

Note1: The EUT has three antennas.

For 2.4GHz function:

For IEEE 802.11b/g/n mode (3TX/3RX)

Ant. 1 (port 1), Ant. 2 (port 2) and Ant. 3 (port 3) could transmit/receive simultaneously.

For 5GHz function:

For IEEE 802.11a/n/ac mode (3TX/3RX)

Ant. 1 (port 1), Ant. 2 (port 2) and Ant. 3 (port 3) could transmit/receive simultaneously.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)
802.11a	0.924	0.343
802.11ac VHT20	0.959	0.182
802.11ac VHT40	0.931	0.311
802.11ac VHT80	0.843	0.742

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter			
Beamforming Function	☐	With beamforming	☒	Without beamforming
Test Software Version	Cart.exe			

1.1.5 Table for Multiple Listing

The model names in the following table are all refer to the identical product.

Brand Name	Model Name	Description
AC1750 Wireless Dual Band Gigabit Router	Archer C7	All the models are identical, the different model names served as marketing strategy.
	Archer A7	

From the above models, model: Archer C7 was selected as representative model for the test and its data was recorded in this report.

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- ANSI C63.10-2013
- FCC KDB 789033 D02 v01r04
- FCC KDB 644545 D03 v01
- FCC KDB 662911 D01 v02r01

1.3 Testing Location Information

Testing Location							
☐	HWA YA	ADD	:	No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.			
		TEL	:	886-3-327-3456	FAX	:	886-3-318-0055
☒	JHUBEI	ADD	:	No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.			
		TEL	:	886-3-656-9065	FAX	:	886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-CB	Owen Hsu & Serway Li	22°C / 54%	Oct. 17, 2017 ~ Oct. 25, 2017
Radiated	03CH01-CB	Welson Chen & Joy Tseng	22°C / 54%	Oct. 13, 2017 ~ Oct. 25, 2017
AC Conduction	CO01-CB	Tony Chang	23°C / 60%	Oct. 18, 2017

Test site Designation No. TW0006 with FCC
Test site registered number IC 4086D with Industry Canada.

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%
Output Power Measurement	1.33 dB	Confidence levels of 95%
Power Density Measurement	1.27 dB	Confidence levels of 95%
Bandwidth Measurement	9.74×10^{-8}	Confidence levels of 95%
Frequency Stability	6.06×10^{-8}	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11a_Nss1,(6Mbps)_3TX	-
5180MHz	20
5200MHz	20.5
5240MHz	20.5
5745MHz	28
5785MHz	28
5825MHz	25
802.11ac VHT20_Nss1,(MCS0)_3TX	-
5180MHz	20
5200MHz	20.5
5240MHz	21
5745MHz	23
5785MHz	26
5825MHz	26
802.11ac VHT40_Nss1,(MCS0)_3TX	-
5190MHz	13
5230MHz	23
5755MHz	24
5795MHz	26
802.11ac VHT80_Nss1,(MCS0)_3TX	-
5210MHz	11
5775MHz	19

Note:
- VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	Normal Link

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emission Bandwidth Maximum Conducted Output Power Peak Power Spectral Density Frequency Stability
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
Tests Item	Unwanted Emissions
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Normal Link
1	EUT in Y axis
2	EUT in Z axis
Mode 2 generated the worst test result, so it was recorded in this report.	
Operating Mode > 1GHz	CTX
	The EUT was performed at Y axis and Z axis position for Radiated emission above 1GHz test, and the worst case was found at Y axis. So the measurement will follow this same test configuration.
1	EUT in Y axis

Note: For band-edge emissions, the worst case of the antenna polarization is judged at first, and the worst case is found in vertical.

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Radiated Emission Co-location
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	EUT in Y axis - WLAN 2.4GHz +WLAN 5GHz
2	EUT in Z axis - WLAN 2.4GHz +WLAN 5GHz
Mode 1 generated the worst test result, so it was recorded in this report.	
Refer to Appendix G for Radiated Emission Co-location.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz + WLAN 5GHz
Refer to Sporton Test Report No.: FA792923 for Co-location RF Exposure Evaluation.	

2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories			
Equipment Name	**Brand Name**	**Model Name**	**Rating**
Adapter	tp-link	T120150-2B1	INPUT: 100-240V, ~ 50/60Hz, 0.6A OUTPUT: 12V, 1.5A

2.5 Support Equipment

For Test Site No: CO01-CB

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB*4	DELL	E6430	DoC
2	Flash disk3.0	Transcend	JetFlash-700	DoC

For Test Site No: 03CH01-CB (below 1GHz)

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB*2	DELL	E4300	DoC
2	NB*2	Apple	Mac Book	DoC
3	Flash disk3.0	Transcend	JetFlash-700	DoC

For Test Site No: 03CH01-CB (above 1GHz)

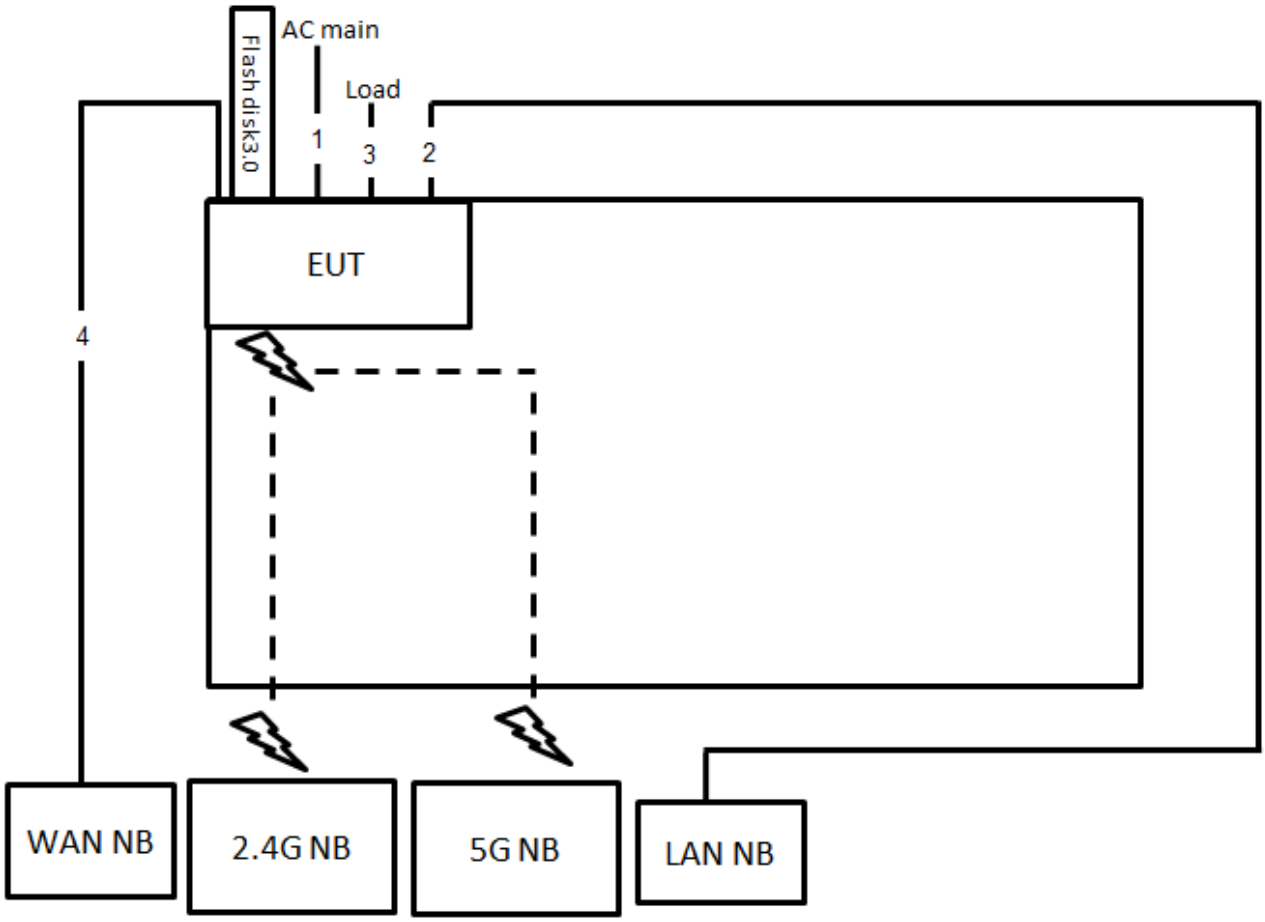
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB	DELL	E4300	DoC

For Test Site No: TH01-CB

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB	DELL	E4300	DoC

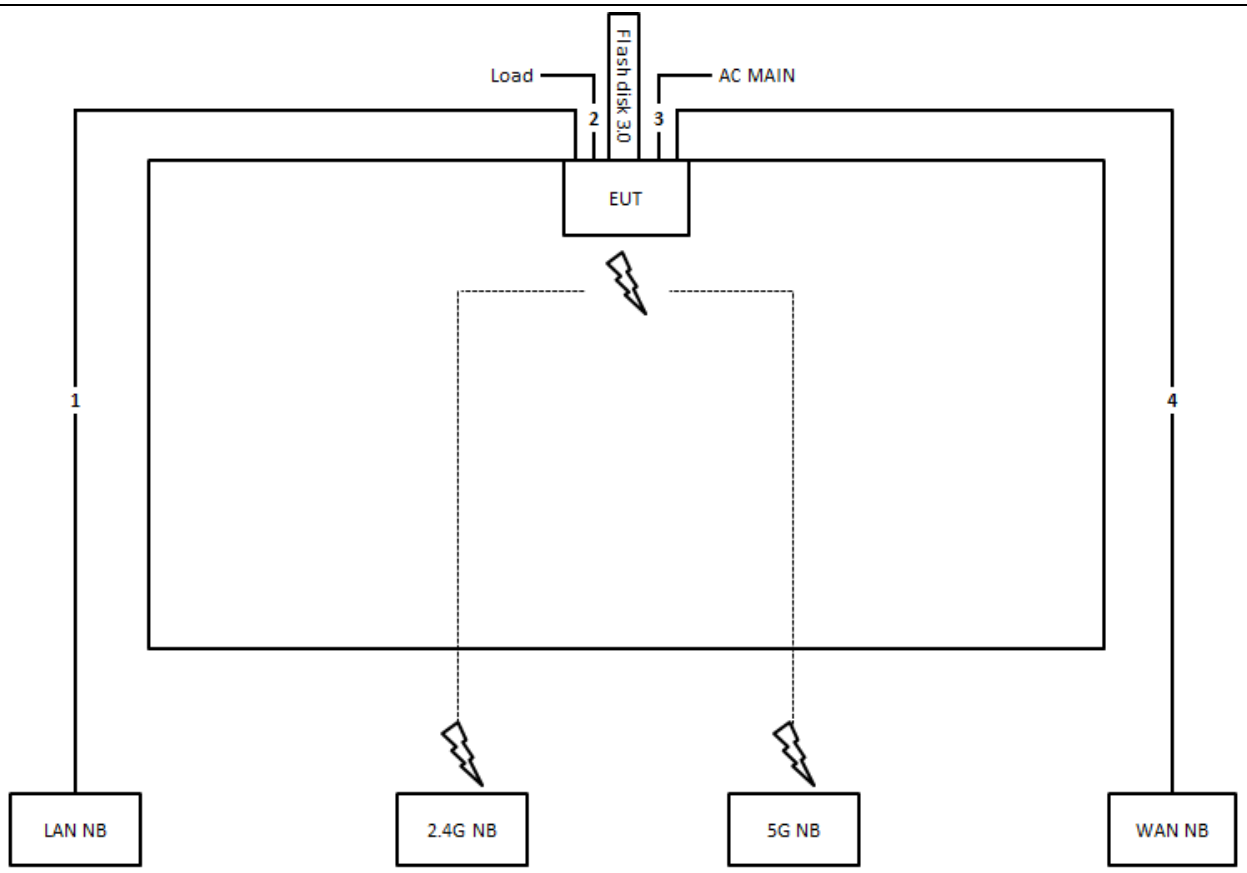
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



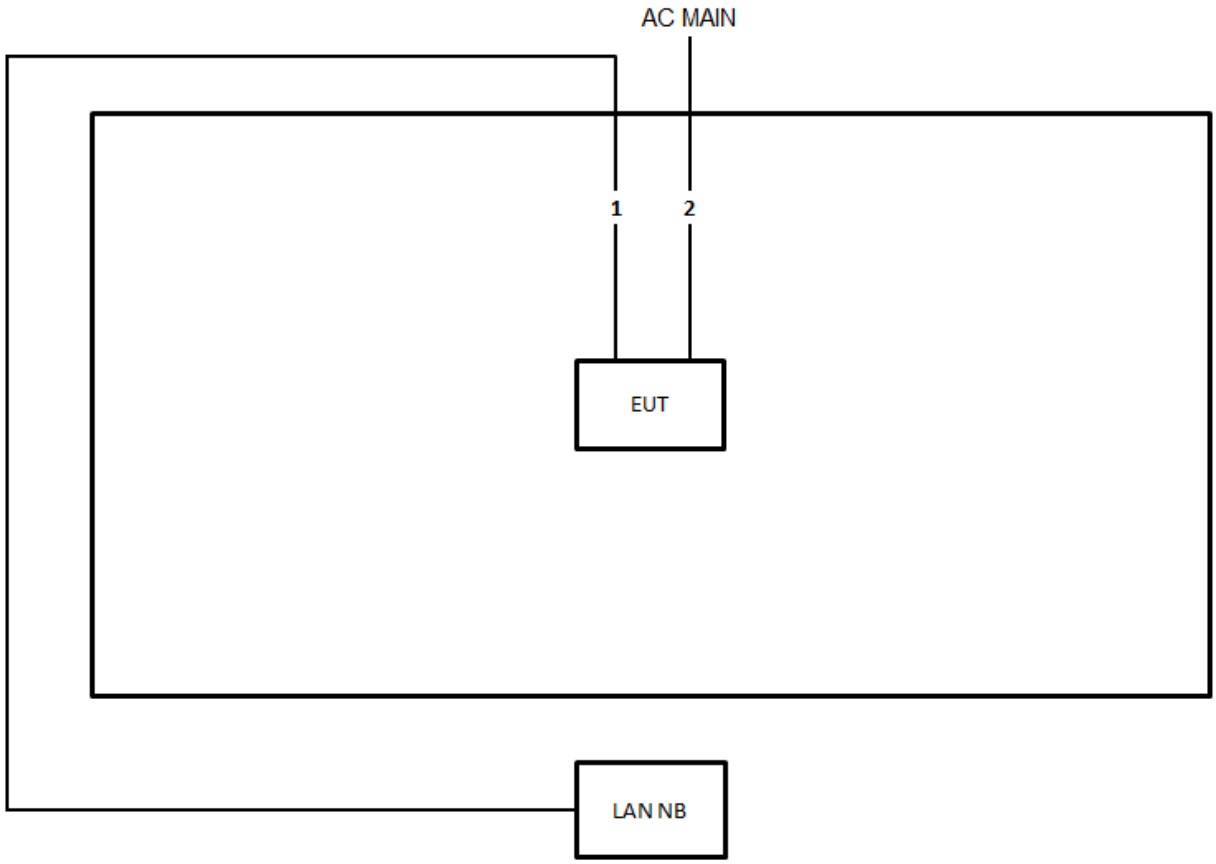
Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	10m
3	RJ-45 cable*3	No	1.5m
4	RJ-45 cable	No	10m

Test Setup Diagram - Radiated Test < 1GHz



Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	RJ-45 cable*3	No	1.5m
3	Power cable	No	1.5m
4	RJ-45 cable	No	10m

Test Setup Diagram - Radiated Test > 1GHz



Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	Power cable	No	1.5m

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

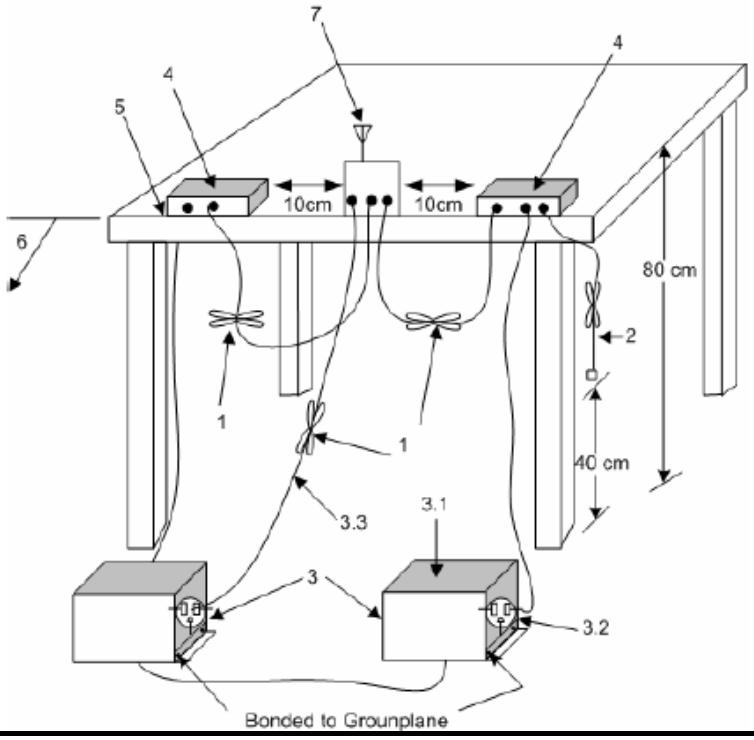
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup

AC Power-line Conducted Emissions



3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

Emission Bandwidth Limit	
UNII Devices	
☒	For the 5.15-5.25 GHz band, N/A
☐	For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
☐	For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
☒	For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.
LE-LAN Devices	
☐	For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
☐	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.

3.2.2 Measuring Instruments

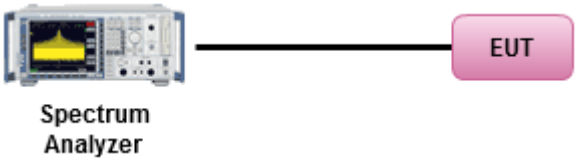
Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method		
▪	For the emission bandwidth shall be measured using one of the options below:	
	☒	Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.
	☐	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.
	☒	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.

3.2.4 Test Setup

Emission Bandwidth



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
UNII Devices	
☒	For the 5.15-5.25 GHz band:
	▪ Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6). e.i.r.p. at any elevation angle above 30 degrees ≤ 125mW [21dBm]
	▪ Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6)
	▪ Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W If G_{TX} > 23 dBi, then P_{Out} = 30 – (G_{TX} – 23).
	▪ Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).
☐	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).
☐	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).
☒	For the 5.725-5.85 GHz band:
	▪ Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6).
	▪ Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
LE-LAN Devices	
☐	For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
☐	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.725-5.85 GHz band:
	▪ Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6).
	▪ Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
P_{Out} = maximum conducted output power in dBm, **G_{TX}** = the maximum transmitting antenna directional gain in dBi.	

3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
▪ Maximum Conducted Output Power	
	Average over on/off periods with duty factor
	☐ Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
	☐ Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty factor
	☒ Refer as FCC KDB 789033, clause E Method PM-G (using an RF average power meter).
▪ For conducted measurement.	
	▪ If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	▪ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup

RF Output Power (Power Meter)


3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
☒	For the 5.15-5.25 GHz band:
	▪ Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If G_{TX} > 6 dBi, then P_{Out} = 17 – (G_{TX} – 6).
	▪ Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If G_{TX} > 6 dBi, then P_{Out} = 17 – (G_{TX} – 6).
	▪ Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If G_{TX} > 23 dBi, then P_{Out} = 17 – (G_{TX} – 23).
	▪ Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 – (G_{TX} – 6)..
☐	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 – (G_{TX} – 6).
☐	For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 – (G_{TX} – 6).
☒	For the 5.725-5.85 GHz band:
	▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If G_{TX} > 6 dBi, then PPSD= 30 – (G_{TX} – 6).
	▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
LE-LAN Devices	
☐	For the 5.15-5.25 GHz band, the peak power spectral density (PPSD) ≤ 4 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.
☐	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 dBm/MHz.
	▪ e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below: -13 dBW/MHz for 0° ≤ θ < 8° ; -13 − 0.716 (θ-8) dBW/MHz for 8° ≤ θ < 40° -35.9 − 1.22 (θ-40) dBW/MHz for 40° ≤ θ ≤ 45° ; -42 dBW/MHz for θ > 45°
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 dBm/MHz.
☐	For the 5.725-5.85 GHz band:
	▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If G_{TX} > 6 dBi, then PPSD= 30 – (G_{TX} – 6).
	▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz **G_{TX}** = the maximum transmitting antenna directional gain in dBi.	

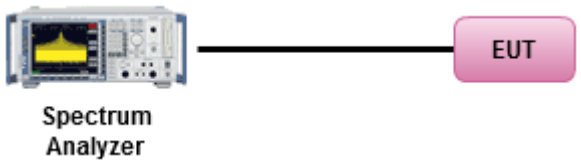
3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method		
▪ Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options:		
	☐ Refer as FCC KDB 789033, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth	
	[duty cycle ≥ 98% or external video / power trigger]	
	☒ Refer as FCC KDB 789033, clause E Method SA-1 (spectral trace averaging).	
	☐ Refer as FCC KDB 789033, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)	
	duty cycle < 98% and average over on/off periods with duty factor	
	☒ Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).	
	☐ Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)	
▪ For conducted measurement.		
	▪ If the EUT supports multiple transmit chains using options given below:	
		☒ Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
		☐ Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
		☐ Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.
	▪	If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + \ldots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$

3.4.4 Test Setup

Power Spectral Density


3.4.5 Test Result of Peak Power Spectral Density

Refer as Appendix D

3.5 Unwanted Emissions

3.5.1 Transmitter Radiated Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit			
Frequency Range (MHz)	**Field Strength (uV/m)**	**Field Strength (dBuV/m)**	**Measure Distance (m)**
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

Un-restricted band emissions above 1GHz Limit	
Operating Band	**Limit**
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.725 - 5.85 GHz	all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

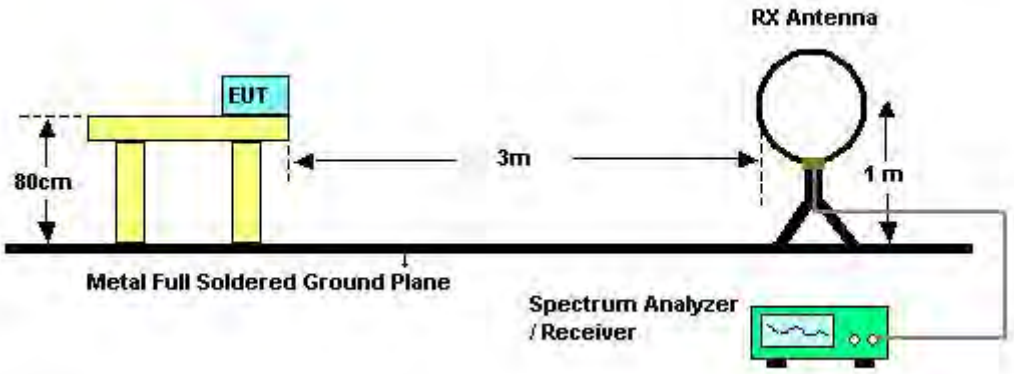
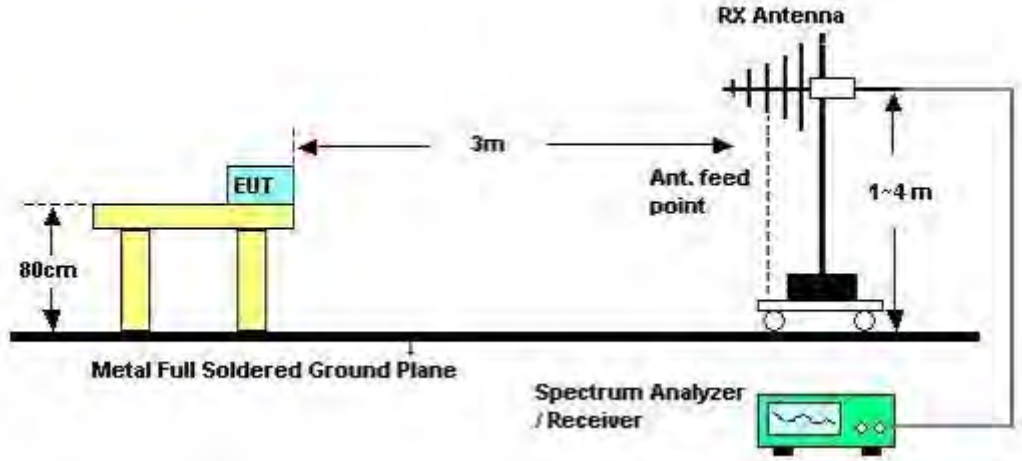
3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

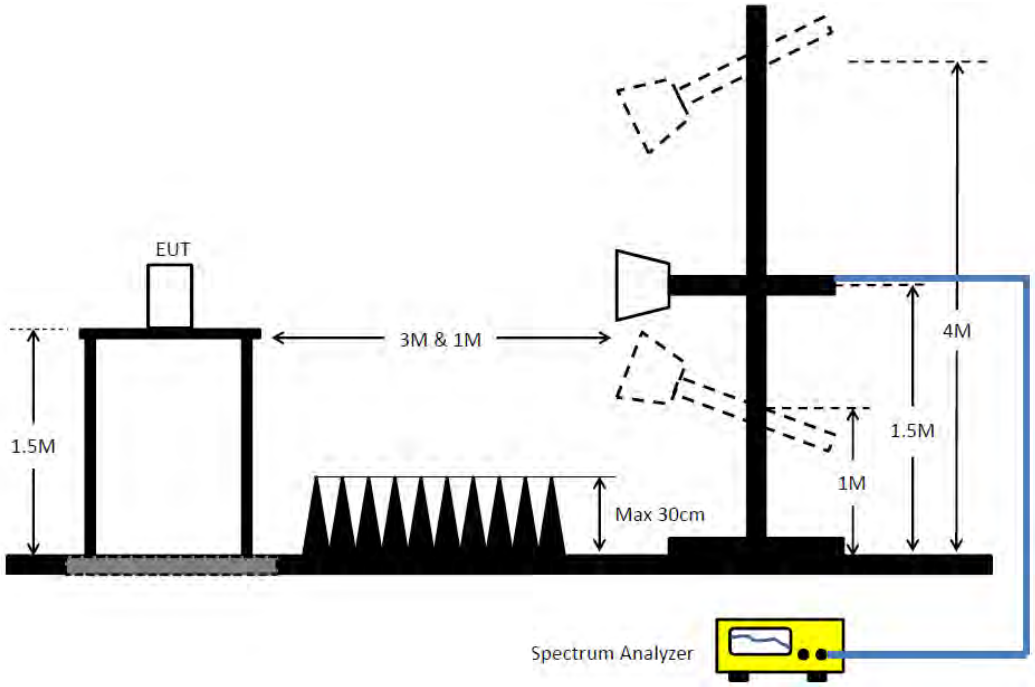
3.5.3 Test Procedures

Test Method		
▪ Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).		
▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].		
▪ For the transmitter unwanted emissions shall be measured using following options below:		
	▪ Refer as FCC KDB 789033, clause H)2) for unwanted emissions into non-restricted bands.	
	▪ Refer as FCC KDB 789033, clause H)1) for unwanted emissions into restricted bands.	
		☐ Refer as FCC KDB 789033, H)6) Method AD (Trace Averaging).
		☒ Refer as FCC KDB 789033, H)6) Method VB (Reduced VBW).
		☐ Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
		☐ Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
		☒ Refer as FCC KDB 789033, clause H)5) measurement procedure peak limit.
		☐ Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
▪ For radiated measurement.		
	▪ Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.	
	▪ Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.	
	▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.	
▪ The any unwanted emissions level shall not exceed the fundamental emission level.		
▪ All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.		

3.5.4 Test Setup

Transmitter Radiated Unwanted Emissions
9kHz ~30MHz

30MHz~1GHz


Above 1GHz



3.5.5 Transmitter Unwanted Emissions (Below 30MHz)

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.5.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E

3.6 Frequency Stability

3.6.1 Frequency Stability Limit

Frequency Stability Limit
UNII Devices
▪ In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.
LE-LAN Devices
▪ N/A
IEEE Std. 802.11
▪ The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band and ± 25 ppm maximum for the 2.4 GHz band.

3.6.2 Measuring Instruments

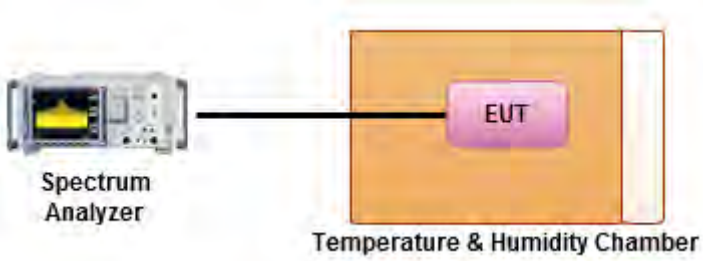
Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Test Method	
▪ Refer as ANSI C63.10, clause 6.8 for frequency stability tests	
	▪ Frequency stability with respect to ambient temperature
	▪ Frequency stability when varying supply voltage
	▪ Extreme temperature is 0℃~40℃.

3.6.4 Test Setup

Frequency Stability



3.6.5 Test Result of Frequency Stability

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 23, 2017	Jan. 22, 2018	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz~ 00MHz	Dec. 14, 2016	Dec. 13, 2017	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 21, 2016	Dec. 20, 2017	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 23, 2017	May 22, 2018	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 30, 2017	Aug. 29, 2018	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Mar. 15, 2018*	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz~18GHz	Nov. 10, 2016	Nov. 09, 2017	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 05, 2017	Jul. 04, 2018	Radiation (03CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980332	20MHz ~ 3GHz	May 02, 2017	May 01, 2018	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 16, 2017	Jan. 15, 2018	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 10, 2017	Jul. 09, 2018	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 22, 2016	Nov. 21, 2017	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 06, 2017	May 05, 2018	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
Test Software	Audix	E3	6.2009-l0-7	N/A	N/A	N/A	Radiation (03CH01-CB)

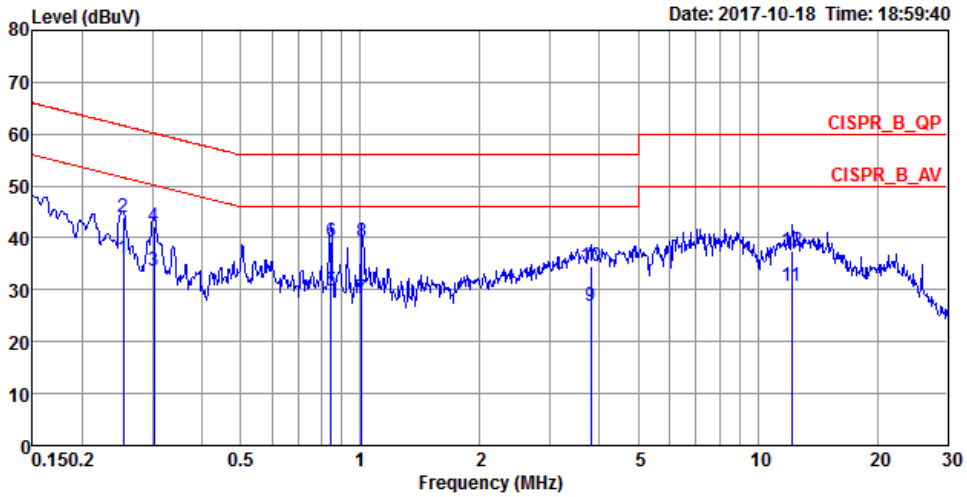
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 26, 2016	Dec. 25, 2017	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 02, 2017	Jun. 01, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 22, 2016	Nov. 21, 2017	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.

"*" Calibration Interval of instruments listed above is two years.

N.C.R. means Non-Calibration required.

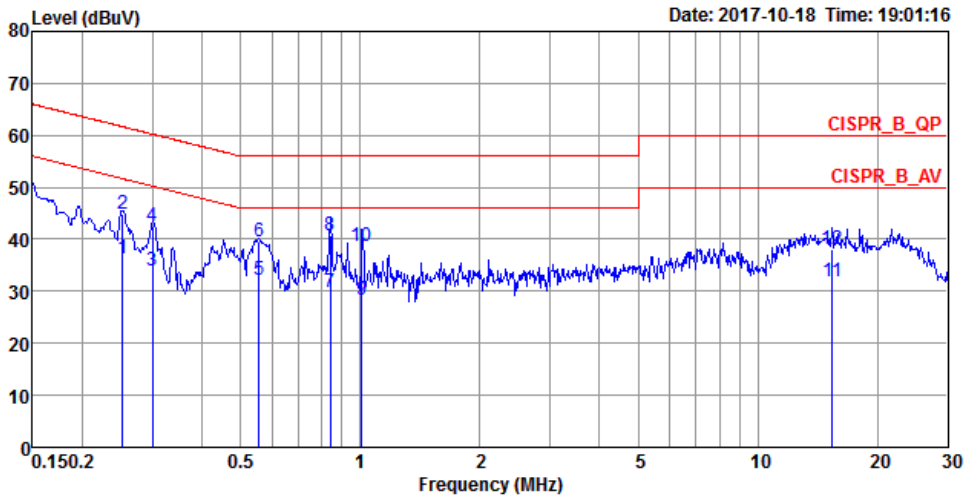
AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Neutral
Operating Function	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.2535	36.01	-15.63	51.64	25.84	10.08	0.09	Average	NEUTRAL
2	0.2535	43.97	-17.67	61.64	33.80	10.08	0.09	QP	NEUTRAL
3	0.3035	33.67	-16.48	50.15	23.46	10.15	0.06	Average	NEUTRAL
4	0.3035	42.07	-18.08	60.15	31.86	10.15	0.06	QP	NEUTRAL
5	0.8438	29.84	-16.16	46.00	19.58	10.10	0.16	Average	NEUTRAL
6	0.8438	39.26	-16.74	56.00	29.00	10.10	0.16	QP	NEUTRAL
7	1.0103	28.40	-17.60	46.00	18.16	10.05	0.19	Average	NEUTRAL
8	1.0103	39.24	-16.76	56.00	29.00	10.05	0.19	QP	NEUTRAL
9	3.7994	27.00	-19.00	46.00	16.93	9.96	0.11	Average	NEUTRAL
10	3.7994	34.43	-21.57	56.00	24.36	9.96	0.11	QP	NEUTRAL
11	12.1884	30.76	-19.24	50.00	20.36	10.23	0.17	Average	NEUTRAL
12	12.1884	37.48	-22.52	60.00	27.08	10.23	0.17	QP	NEUTRAL

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

AC Power-line Conducted Emissions Result			
Operating Mode	1	**Power Phase**	Line
Operating Function	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.2521	36.39	-15.30	51.69	26.38	9.92	0.09	Average	LINE
2	0.2521	44.80	-16.89	61.69	34.79	9.92	0.09	QP	LINE
3	0.3003	33.84	-16.40	50.24	23.85	9.93	0.06	Average	LINE
4	0.3003	42.54	-17.70	60.24	32.55	9.93	0.06	QP	LINE
5	0.5552	32.24	-13.76	46.00	22.22	9.95	0.07	Average	LINE
6	0.5552	39.50	-16.50	56.00	29.48	9.95	0.07	QP	LINE
7	0.8393	29.86	-16.14	46.00	19.75	9.96	0.15	Average	LINE
8	0.8393	40.86	-15.14	56.00	30.75	9.96	0.15	QP	LINE
9	1.0103	28.27	-17.73	46.00	18.12	9.96	0.19	Average	LINE
10	1.0103	38.74	-17.26	56.00	28.59	9.96	0.19	QP	LINE
11	15.3883	31.91	-18.09	50.00	21.48	10.24	0.19	Average	LINE
12	15.3883	38.13	-21.87	60.00	27.70	10.24	0.19	QP	LINE

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_3TX	25.7M	16.592M	16M6D1D	22.6M	16.467M
802.11ac VHT20_Nss1,(MCS0)_3TX	26.975M	17.766M	17M8D1D	23.9M	17.691M
802.11ac VHT40_Nss1,(MCS0)_3TX	72M	36.632M	36M6D1D	44.75M	36.182M
802.11ac VHT80_Nss1,(MCS0)_3TX	87.8M	75.762M	75M8D1D	85.2M	75.662M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_3TX	16.325M	28.411M	28M4D1D	16M	16.592M
802.11ac VHT20_Nss1,(MCS0)_3TX	17.575M	26.412M	26M4D1D	17.25M	17.716M
802.11ac VHT40_Nss1,(MCS0)_3TX	36.3M	45.977M	46M0D1D	35.6M	36.332M
802.11ac VHT80_Nss1,(MCS0)_3TX	75.9M	75.862M	75M9D1D	72.9M	75.662M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
Min-OBW = Minimum 99% occupied bandwidth;

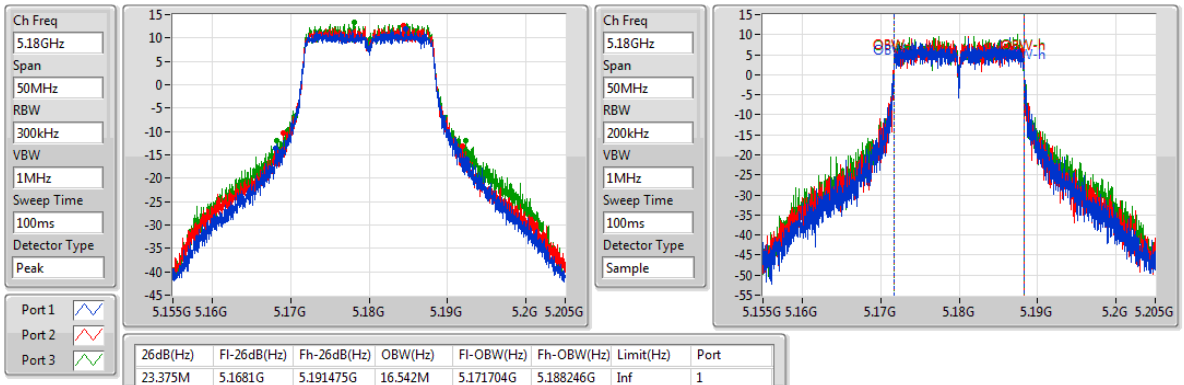
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)
802.11a_Nss1,(6Mbps)_3TX	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	23.375M	16.542M	22.8M	16.517M	24.125M	16.542M
5200MHz	Pass	Inf	23.725M	16.467M	23.125M	16.517M	25.7M	16.592M
5240MHz	Pass	Inf	23.625M	16.542M	22.6M	16.517M	24.55M	16.567M
5745MHz	Pass	500k	16.3M	27.336M	16.325M	24.763M	16.3M	22.239M
5785MHz	Pass	500k	16.325M	28.411M	16.25M	24.488M	16M	22.214M
5825MHz	Pass	500k	16.3M	22.764M	16.325M	17.341M	16.275M	16.592M
802.11ac VHT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	24.325M	17.716M	23.9M	17.716M	26.075M	17.741M
5200MHz	Pass	Inf	24.725M	17.691M	24.75M	17.741M	26.975M	17.766M
5240MHz	Pass	Inf	25.225M	17.741M	24.1M	17.716M	26.4M	17.741M
5745MHz	Pass	500k	17.55M	17.816M	17.575M	17.791M	17.55M	17.716M
5785MHz	Pass	500k	17.525M	25.312M	17.5M	19.865M	17.3M	18.241M
5825MHz	Pass	500k	17.575M	26.412M	17.25M	20.89M	17.55M	17.891M
802.11ac VHT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	44.75M	36.182M	45.6M	36.232M	45.4M	36.232M
5230MHz	Pass	Inf	55.35M	36.332M	48.6M	36.332M	72M	36.632M
5755MHz	Pass	500k	36.1M	36.482M	35.65M	36.382M	36.3M	36.332M
5795MHz	Pass	500k	35.75M	45.977M	36.25M	36.932M	35.6M	36.532M
802.11ac VHT80_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	86.8M	75.762M	87.8M	75.762M	85.2M	75.662M
5775MHz	Pass	500k	75.3M	75.862M	75.9M	75.662M	72.9M	75.662M

Port X-N dB = Port **X** 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port **X** 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_3TX **EBW**

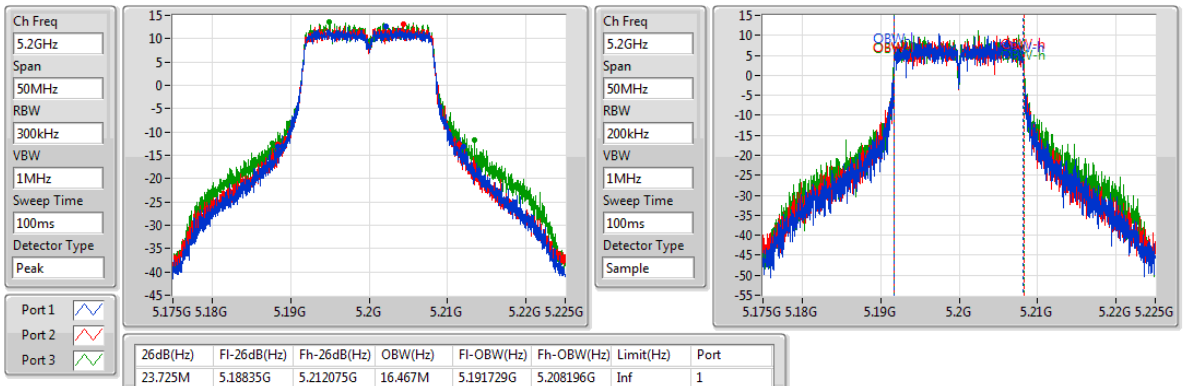
5180MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
23.375M	5.1681G	5.191475G	16.542M	5.171704G	5.188246G	Inf	1
22.8M	5.16905G	5.19185G	16.517M	5.171704G	5.188221G	Inf	2
24.125M	5.168225G	5.19235G	16.542M	5.171704G	5.188246G	Inf	3

802.11a_Nss1,(6Mbps)_3TX **EBW**

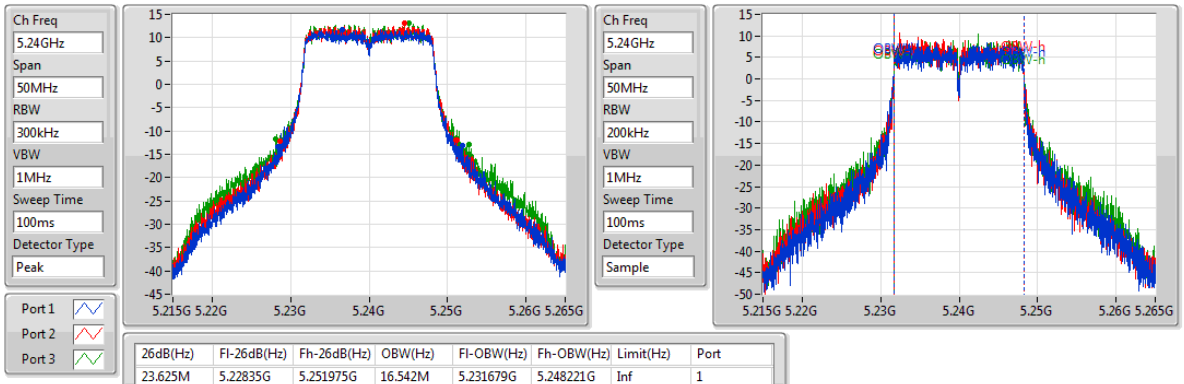
5200MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
23.725M	5.18835G	5.212075G	16.467M	5.191729G	5.208196G	Inf	1
23.125M	5.188375G	5.2115G	16.517M	5.191704G	5.208221G	Inf	2
25.7M	5.1877G	5.2134G	16.592M	5.191679G	5.208271G	Inf	3

802.11a_Nss1,(6Mbps)_3TX **EBW**

5240MHz

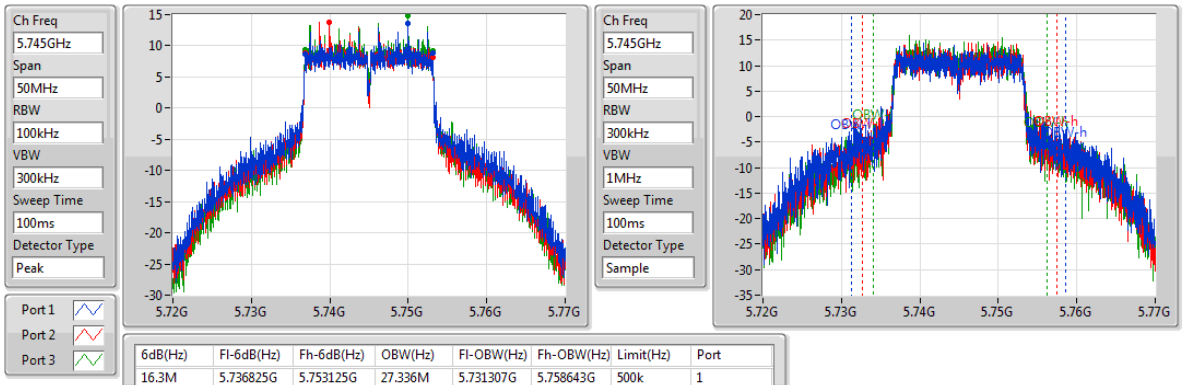


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
23.625M	5.22835G	5.251975G	16.542M	5.231679G	5.248221G	Inf	1
22.6M	5.22865G	5.25125G	16.517M	5.231704G	5.248221G	Inf	2
24.55M	5.228125G	5.252675G	16.567M	5.231679G	5.248246G	Inf	3

802.11a_Nss1,(6Mbps)_3TX

EBW

5745MHz

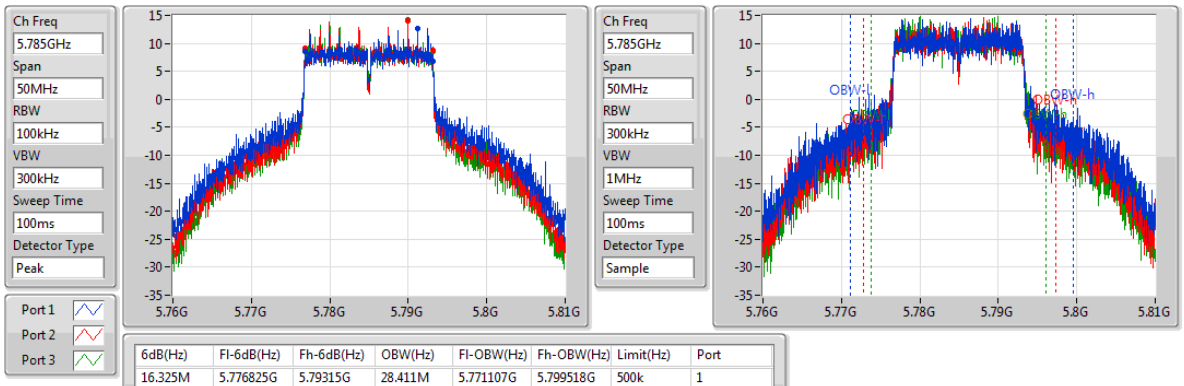


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.3M	5.736825G	5.753125G	27.336M	5.731307G	5.758643G	500k	1
16.325M	5.736825G	5.75315G	24.763M	5.732706G	5.757469G	500k	2
16.3M	5.736825G	5.753125G	22.239M	5.73403G	5.756269G	500k	3

802.11a_Nss1,(6Mbps)_3TX

EBW

5785MHz

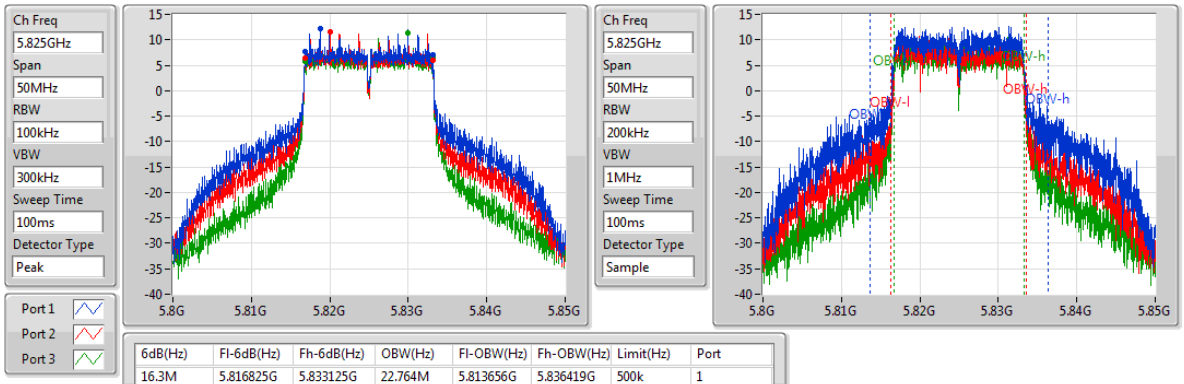


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.325M	5.776825G	5.79315G	28.411M	5.771107G	5.799518G	500k	1
16.25M	5.77685G	5.7931G	24.488M	5.772806G	5.797294G	500k	2
16M	5.7771G	5.7931G	22.214M	5.773856G	5.796069G	500k	3

802.11a_Nss1,(6Mbps)_3TX

EBW

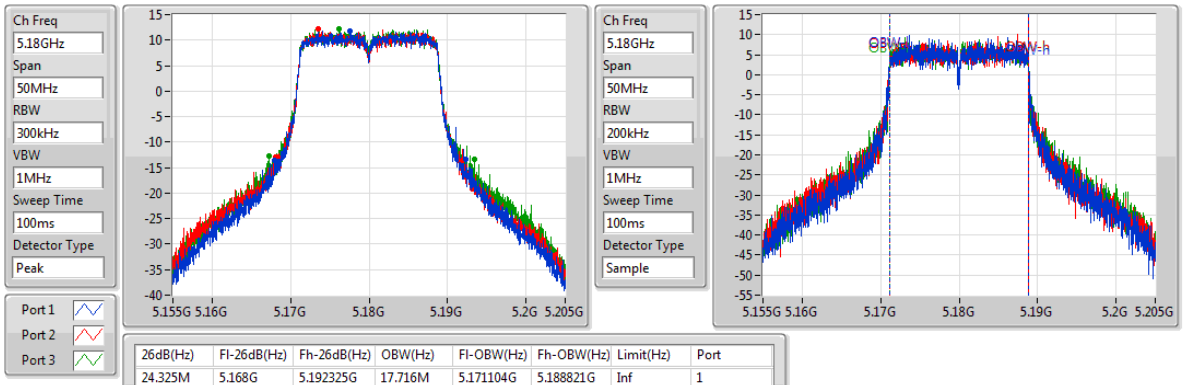
5825MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.3M	5.816825G	5.833125G	22.764M	5.813656G	5.836419G	500k	1
16.325M	5.816825G	5.83315G	17.341M	5.816254G	5.833596G	500k	2
16.275M	5.816825G	5.8331G	16.592M	5.816654G	5.833246G	500k	3

802.11ac VHT20_Nss1,(MCS0)_3TX EBW

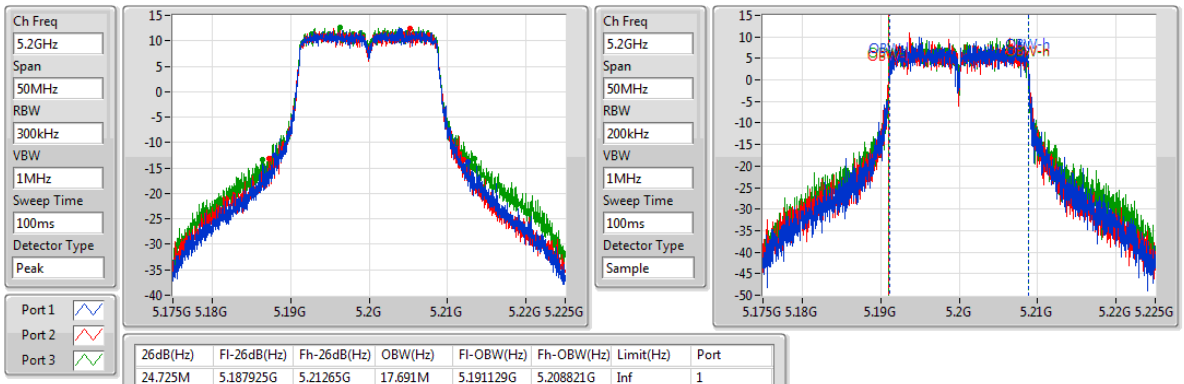
5180MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
24.325M	5.168G	5.192325G	17.716M	5.171104G	5.188821G	Inf	1
23.9M	5.168075G	5.191975G	17.716M	5.171104G	5.188821G	Inf	2
26.075M	5.1673G	5.193375G	17.741M	5.171104G	5.188846G	Inf	3

802.11ac VHT20_Nss1,(MCS0)_3TX EBW

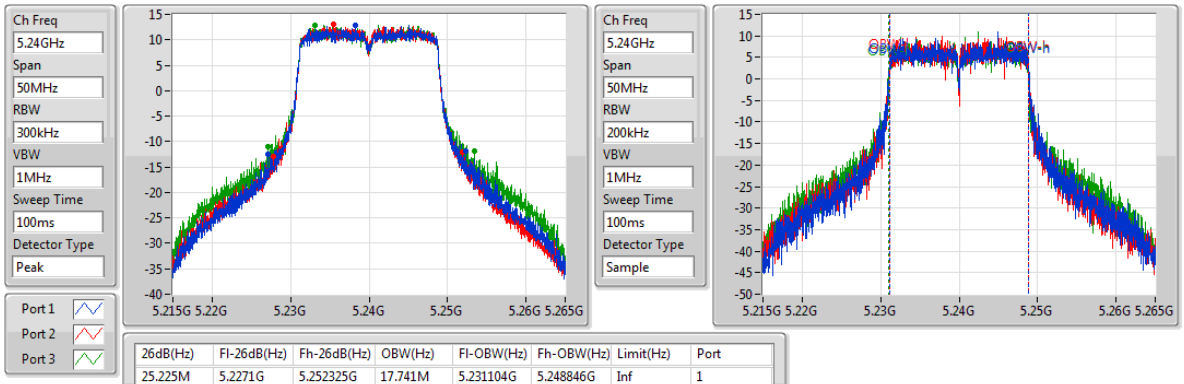
5200MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
24.725M	5.187925G	5.21265G	17.691M	5.191129G	5.208821G	Inf	1
24.75M	5.187325G	5.212075G	17.741M	5.191079G	5.208821G	Inf	2
26.975M	5.186425G	5.2134G	17.766M	5.191079G	5.208846G	Inf	3

802.11ac VHT20_Nss1,(MCS0)_3TX EBW

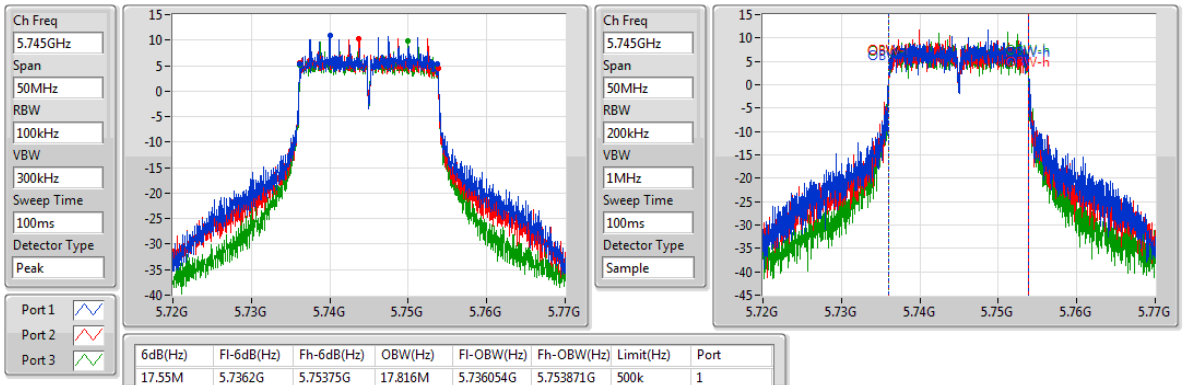
5240MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
25.225M	5.2271G	5.252325G	17.741M	5.231104G	5.248846G	Inf	1
24.1M	5.2278G	5.2519G	17.716M	5.231129G	5.248846G	Inf	2
26.4M	5.22705G	5.25345G	17.741M	5.231079G	5.248821G	Inf	3

802.11ac VHT20_Nss1,(MCS0)_3TX **EBW**

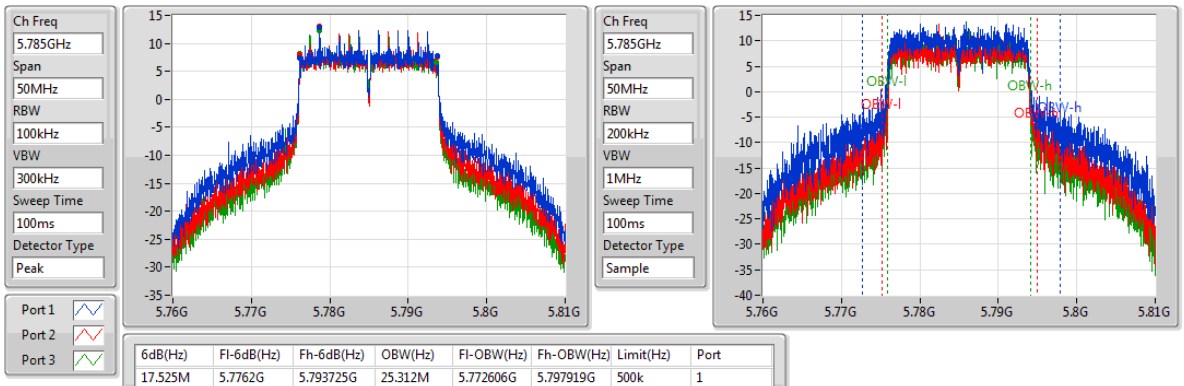
5745MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.55M	5.7362G	5.75375G	17.816M	5.736054G	5.753871G	500k	1
17.575M	5.7362G	5.753775G	17.791M	5.736054G	5.753846G	500k	2
17.55M	5.7362G	5.75375G	17.716M	5.736079G	5.753796G	500k	3

802.11ac VHT20_Nss1,(MCS0)_3TX **EBW**

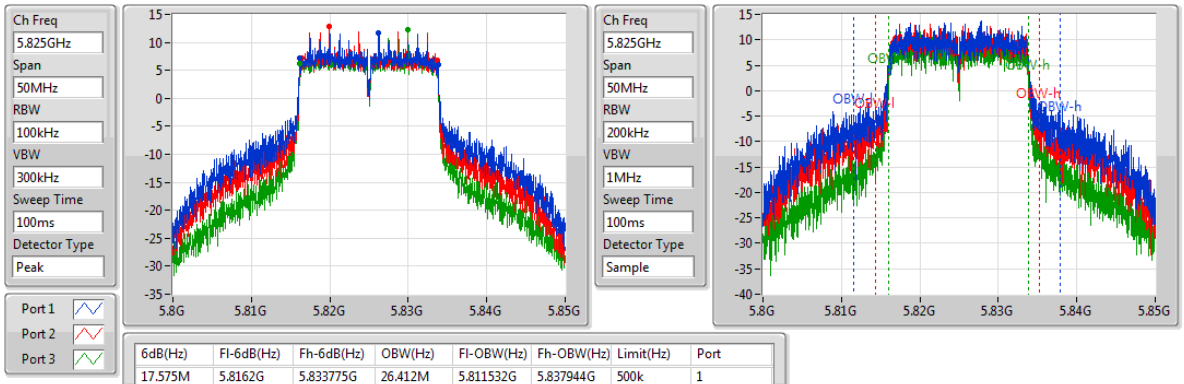
5785MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.525M	5.7762G	5.793725G	25.312M	5.772606G	5.797919G	500k	1
17.5M	5.776225G	5.793725G	19.865M	5.775155G	5.79502G	500k	2
17.3M	5.7762G	5.7935G	18.241M	5.77588G	5.79412G	500k	3

802.11ac VHT20_Nss1,(MCS0)_3TX **EBW**

5825MHz

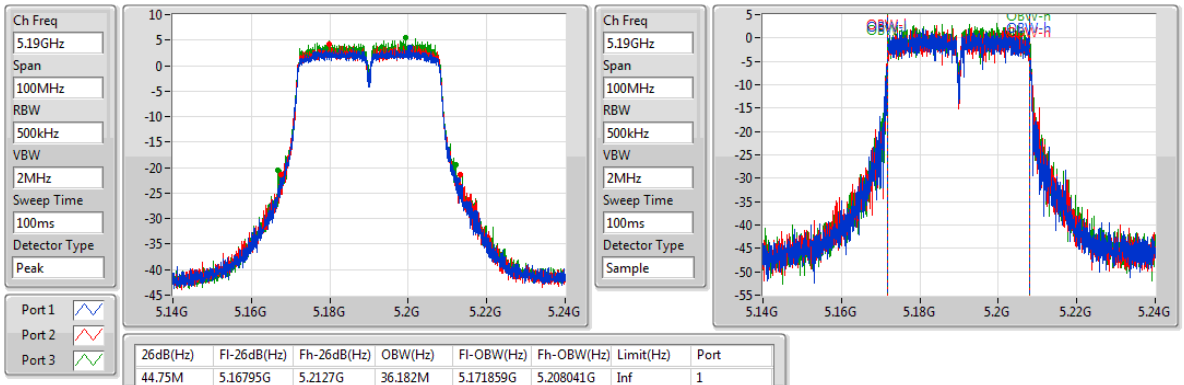


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.575M	5.8162G	5.833775G	26.412M	5.811532G	5.837944G	500k	1
17.25M	5.8165G	5.83375G	20.89M	5.81433G	5.83522G	500k	2
17.55M	5.8162G	5.83375G	17.891M	5.816004G	5.833896G	500k	3

802.11ac VHT40_Nss1,(MCS0)_3TX

EBW

5190MHz

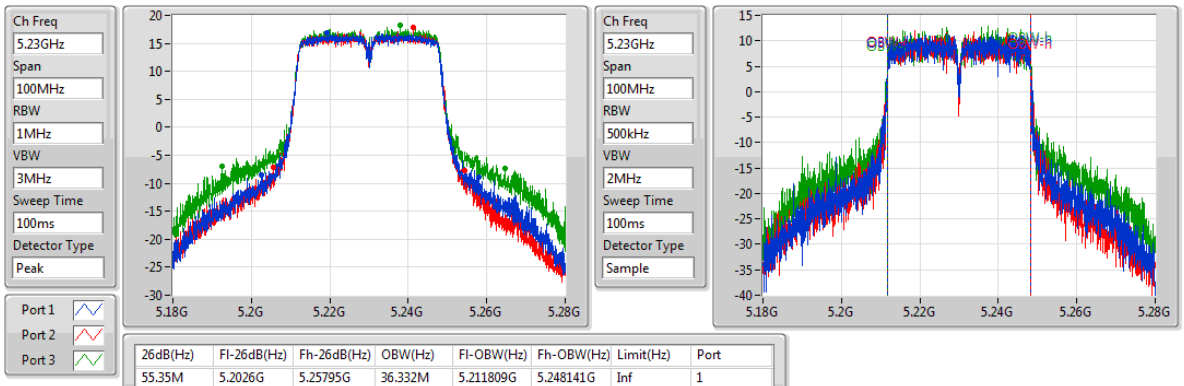


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
44.75M	5.16795G	5.2127G	36.182M	5.171859G	5.208041G	Inf	1
45.6M	5.1676G	5.2132G	36.232M	5.171859G	5.208091G	Inf	2
45.4M	5.1667G	5.2121G	36.232M	5.171859G	5.208091G	Inf	3

802.11ac VHT40_Nss1,(MCS0)_3TX

EBW

5230MHz

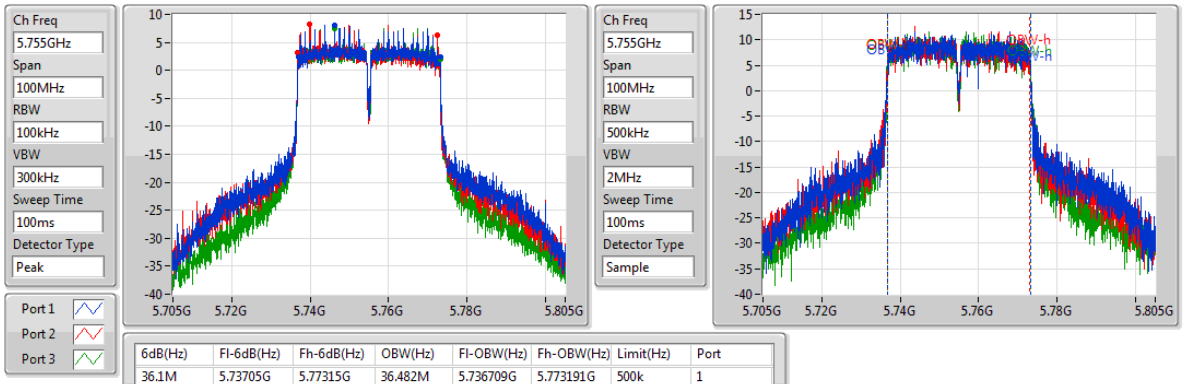


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
55.35M	5.2026G	5.25795G	36.332M	5.211809G	5.248141G	Inf	1
48.6M	5.2057G	5.2543G	36.332M	5.211809G	5.248141G	Inf	2
72M	5.19265G	5.26465G	36.632M	5.211709G	5.248341G	Inf	3

802.11ac VHT40_Nss1,(MCS0)_3TX

EBW

5755MHz

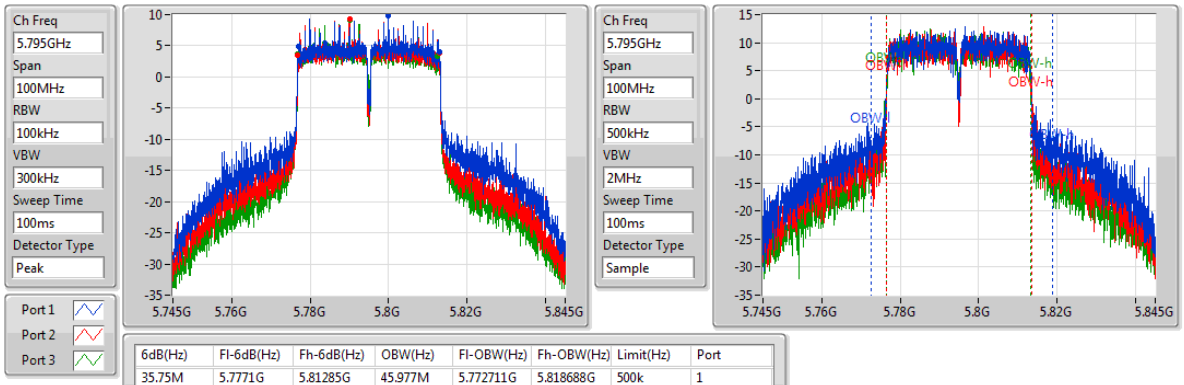


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.1M	5.73705G	5.77315G	36.482M	5.736709G	5.773191G	500k	1
35.65M	5.73685G	5.7725G	36.382M	5.736709G	5.773091G	500k	2
36.3M	5.73685G	5.77315G	36.332M	5.736809G	5.773141G	500k	3

802.11ac VHT40_Nss1,(MCS0)_3TX

EBW

5795MHz

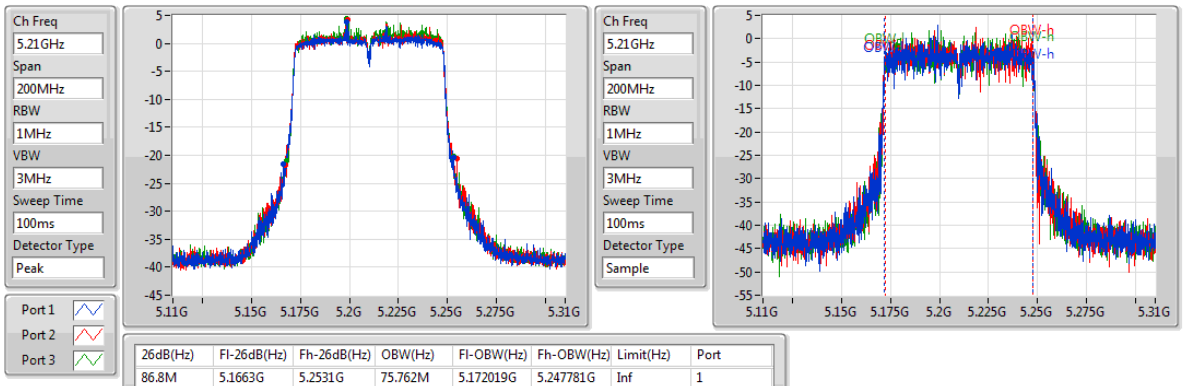


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
35.75M	5.7771G	5.81285G	45.977M	5.772711G	5.818688G	500k	1
36.25M	5.77685G	5.8131G	36.932M	5.776509G	5.813441G	500k	2
35.6M	5.77685G	5.81245G	36.532M	5.776609G	5.813141G	500k	3

802.11ac VHT80_Nss1,(MCS0)_3TX

EBW

5210MHz

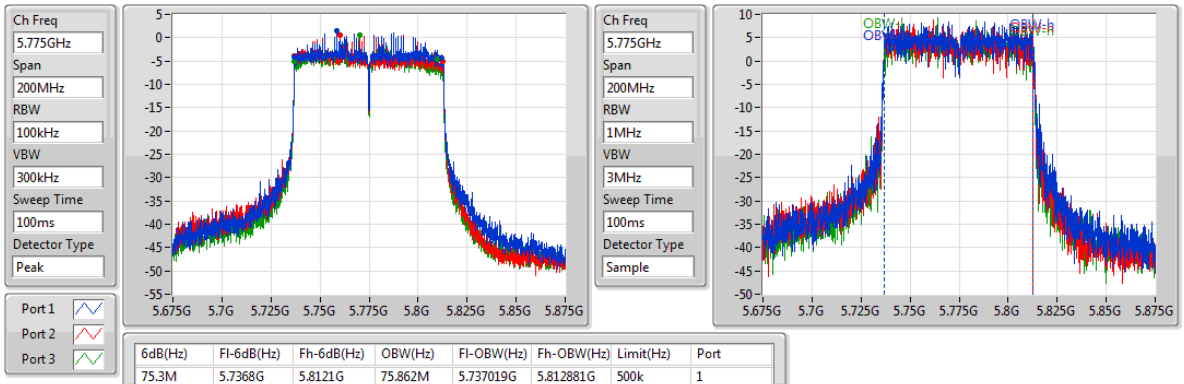


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
86.8M	5.1663G	5.2531G	75.762M	5.172019G	5.247781G	Inf	1
87.8M	5.1672G	5.255G	75.762M	5.172119G	5.247881G	Inf	2
85.2M	5.1678G	5.253G	75.662M	5.172219G	5.247881G	Inf	3

802.11ac VHT80_Nss1,(MCS0)_3TX

EBW

5775MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
75.3M	5.7368G	5.8121G	75.862M	5.737019G	5.812881G	500k	1
75.9M	5.7368G	5.8127G	75.662M	5.736919G	5.812581G	500k	2
72.9M	5.7371G	5.81G	75.662M	5.736919G	5.812581G	500k	3

Summary

Mode	Total Power (dBm)	Total Power (W)
5.15-5.25GHz	-	-
802.11a_Nss1,(6Mbps)_3TX	26.25	0.42170
802.11ac VHT20_Nss1,(MCS0)_3TX	26.30	0.42658
802.11ac VHT40_Nss1,(MCS0)_3TX	27.41	0.55081
802.11ac VHT80_Nss1,(MCS0)_3TX	16.07	0.04046
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_3TX	29.14	0.82035
802.11ac VHT20_Nss1,(MCS0)_3TX	28.29	0.67453
802.11ac VHT40_Nss1,(MCS0)_3TX	27.91	0.61802
802.11ac VHT80_Nss1,(MCS0)_3TX	23.01	0.19999

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11a_Nss1,(6Mbps)_3TX	-	-	-	-	-	-	-
5180MHz	Pass	5.00	20.51	21.05	21.55	25.83	30.00
5200MHz	Pass	5.00	21.17	21.50	21.74	26.25	30.00
5240MHz	Pass	5.00	20.94	21.26	21.27	25.93	30.00
5745MHz	Pass	5.00	24.16	24.09	24.81	29.14	30.00
5785MHz	Pass	5.00	24.18	24.15	24.28	28.97	30.00
5825MHz	Pass	5.00	22.85	22.56	22.05	27.27	30.00
802.11ac VHT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5180MHz	Pass	5.00	20.89	20.92	21.14	25.76	30.00
5200MHz	Pass	5.00	21.41	21.37	21.62	26.24	30.00
5240MHz	Pass	5.00	21.43	21.64	21.51	26.30	30.00
5745MHz	Pass	5.00	22.06	21.81	21.67	26.62	30.00
5785MHz	Pass	5.00	23.74	23.38	23.42	28.29	30.00
5825MHz	Pass	5.00	23.28	23.03	22.93	27.85	30.00
802.11ac VHT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5190MHz	Pass	5.00	13.37	13.51	14.02	18.41	30.00
5230MHz	Pass	5.00	22.54	22.43	22.92	27.41	30.00
5755MHz	Pass	5.00	22.29	22.11	22.04	26.92	30.00
5795MHz	Pass	5.00	23.52	23.03	22.83	27.91	30.00
802.11ac VHT80_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5210MHz	Pass	5.00	11.02	11.21	11.65	16.07	30.00
5775MHz	Pass	5.00	18.79	18.03	17.85	23.01	30.00

DG = Directional Gain; **Port X** = Port X output power

Summary

Mode	PD (dBm/RBW)
5.15-5.25GHz	-
802.11a_Nss1,(6Mbps)_3TX	13.17
802.11ac VHT20_Nss1,(MCS0)_3TX	13.01
802.11ac VHT40_Nss1,(MCS0)_3TX	11.13
802.11ac VHT80_Nss1,(MCS0)_3TX	-3.23
5.725-5.85GHz	-
802.11a_Nss1,(6Mbps)_3TX	14.68
802.11ac VHT20_Nss1,(MCS0)_3TX	13.40
802.11ac VHT40_Nss1,(MCS0)_3TX	10.22
802.11ac VHT80_Nss1,(MCS0)_3TX	2.37

RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

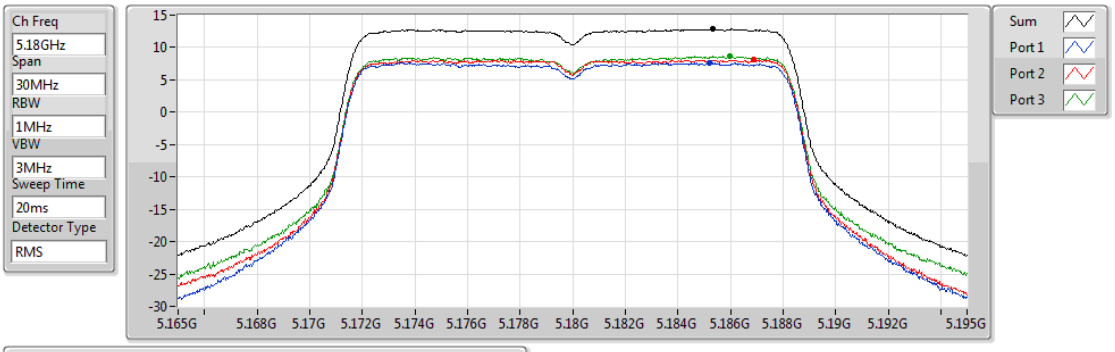
Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11a_Nss1,(6Mbps)_3TX	-	-	-	-	-	-	-
5180MHz	Pass	9.77	7.67	8.07	8.68	12.89	13.23
5200MHz	Pass	9.77	8.14	8.54	8.96	13.17	13.23
5240MHz	Pass	9.77	7.93	8.62	8.44	13.00	13.23
5745MHz	Pass	9.77	9.64	9.90	10.38	14.68	26.23
5785MHz	Pass	9.77	9.59	9.82	10.05	14.46	26.23
5825MHz	Pass	9.77	8.59	8.39	7.63	12.91	26.23
802.11ac VHT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5180MHz	Pass	9.77	7.55	7.52	7.92	12.36	13.23
5200MHz	Pass	9.77	7.98	8.30	8.34	12.84	13.23
5240MHz	Pass	9.77	8.25	8.47	8.41	13.01	13.23
5745MHz	Pass	9.77	7.36	7.19	6.85	11.82	26.23
5785MHz	Pass	9.77	8.74	8.65	8.81	13.40	26.23
5825MHz	Pass	9.77	8.48	8.56	8.10	13.06	26.23
802.11ac VHT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5190MHz	Pass	9.77	-2.91	-2.79	-2.19	2.04	13.23
5230MHz	Pass	9.77	6.43	6.25	6.60	11.13	13.23
5755MHz	Pass	9.77	4.82	4.71	4.47	9.31	26.23
5795MHz	Pass	9.77	5.87	5.49	5.54	10.22	26.23
802.11ac VHT80_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
5210MHz	Pass	9.77	-8.36	-7.99	-7.40	-3.23	13.23
5775MHz	Pass	9.77	-1.87	-2.09	-2.34	2.37	26.23

DG = Directional Gain; **RBW** = 500kHz for 5.725-5.85GHz band / 1MHz for other band;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

802.11a_Nss1,(6Mbps)_3TX PSD

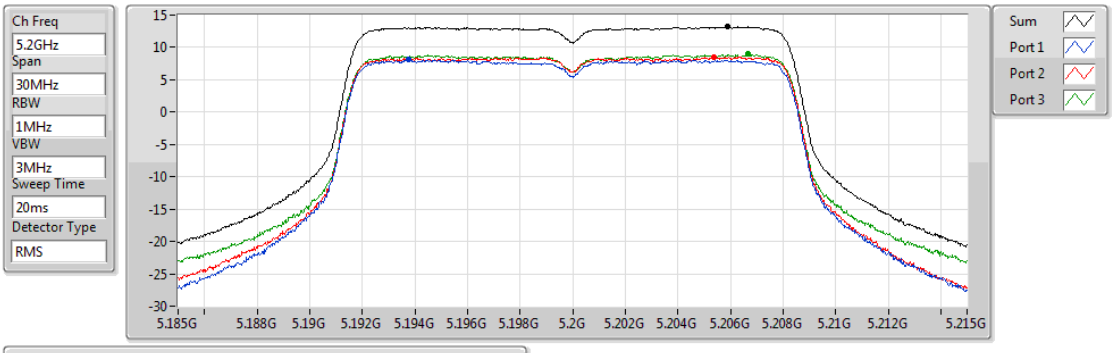
5180MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
12.89	12.89	7.67	8.07	8.68

802.11a_Nss1,(6Mbps)_3TX PSD

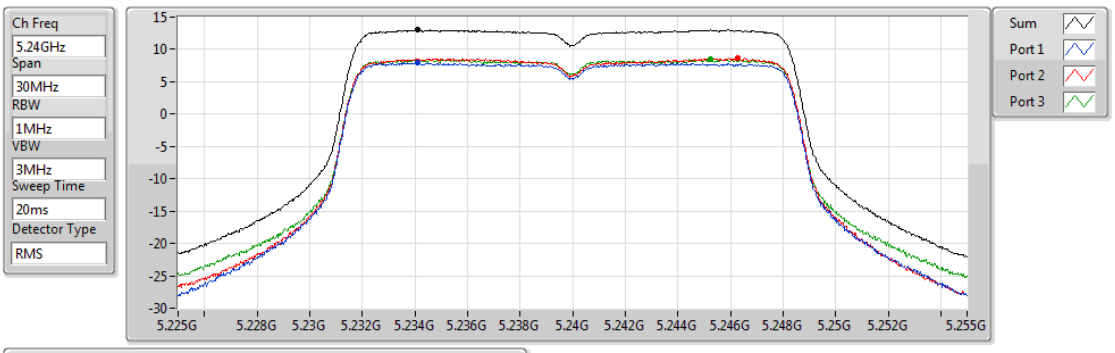
5200MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
13.17	13.17	8.14	8.54	8.96

802.11a_Nss1,(6Mbps)_3TX PSD

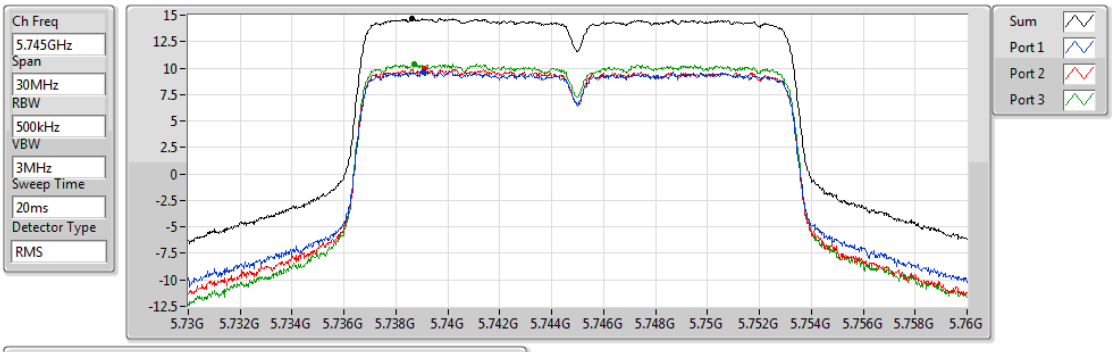
5240MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
13.00	13.00	7.93	8.62	8.44

802.11a_Nss1,(6Mbps)_3TX **PSD**

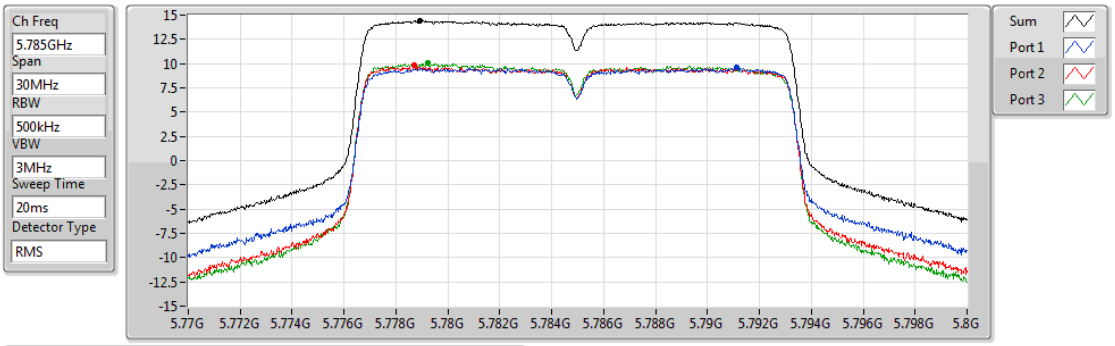
5745MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
14.68	14.68	9.64	9.90	10.38

802.11a_Nss1,(6Mbps)_3TX **PSD**

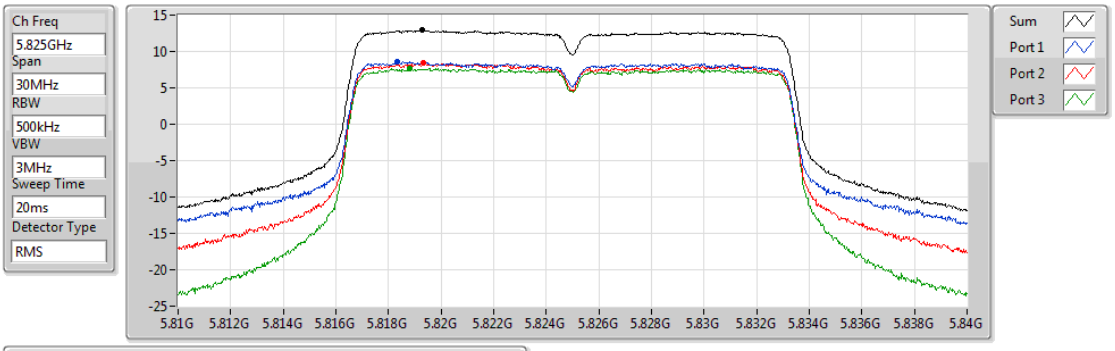
5785MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
14.46	14.46	9.59	9.82	10.05

802.11a_Nss1,(6Mbps)_3TX **PSD**

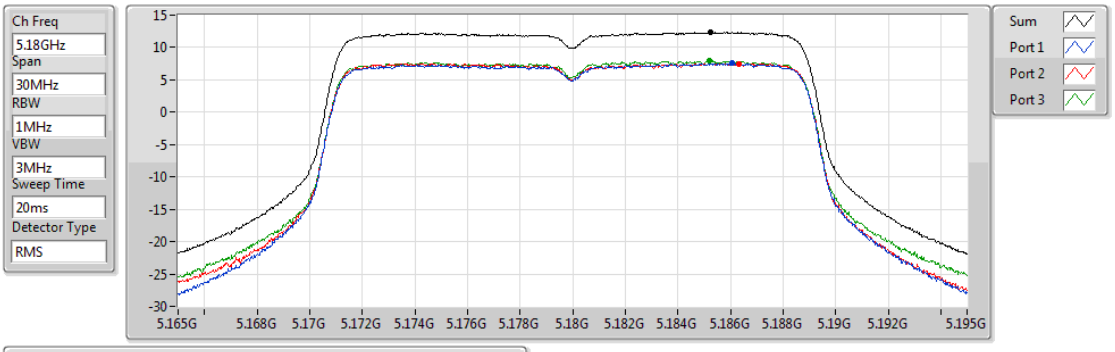
5825MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
12.91	12.91	8.59	8.39	7.63

802.11ac VHT20_Nss1,(MCS0)_3TX PSD

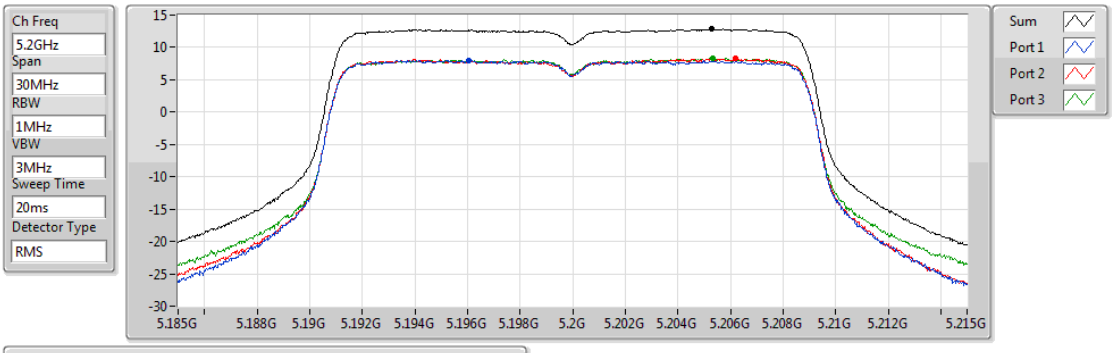
5180MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
12.36	12.36	7.55	7.52	7.92

802.11ac VHT20_Nss1,(MCS0)_3TX PSD

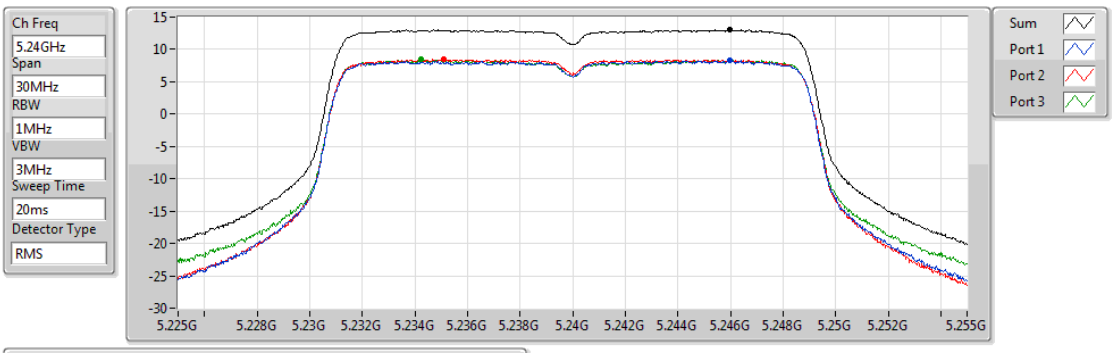
5200MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
12.84	12.84	7.98	8.30	8.34

802.11ac VHT20_Nss1,(MCS0)_3TX PSD

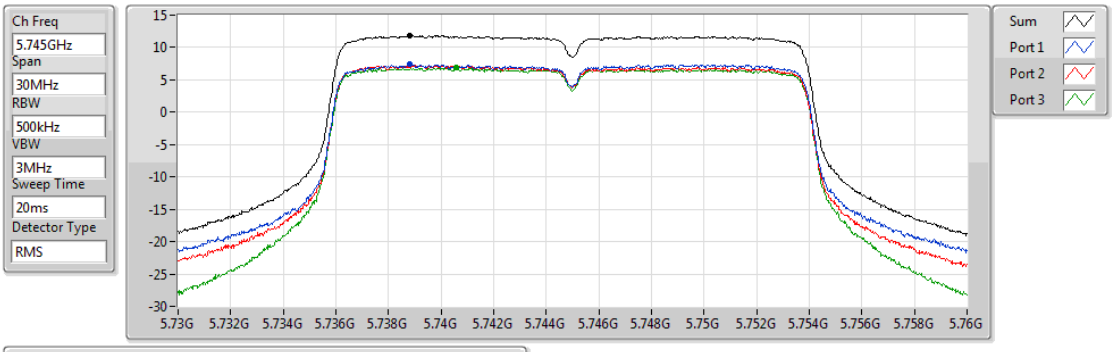
5240MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
13.01	13.01	8.25	8.47	8.41

802.11ac VHT20_Nss1,(MCS0)_3TX PSD

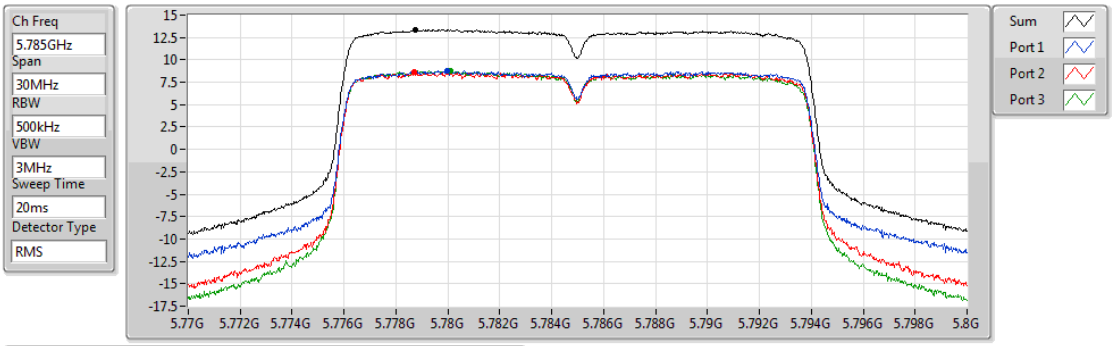
5745MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
11.82	11.82	7.36	7.19	6.85

802.11ac VHT20_Nss1,(MCS0)_3TX PSD

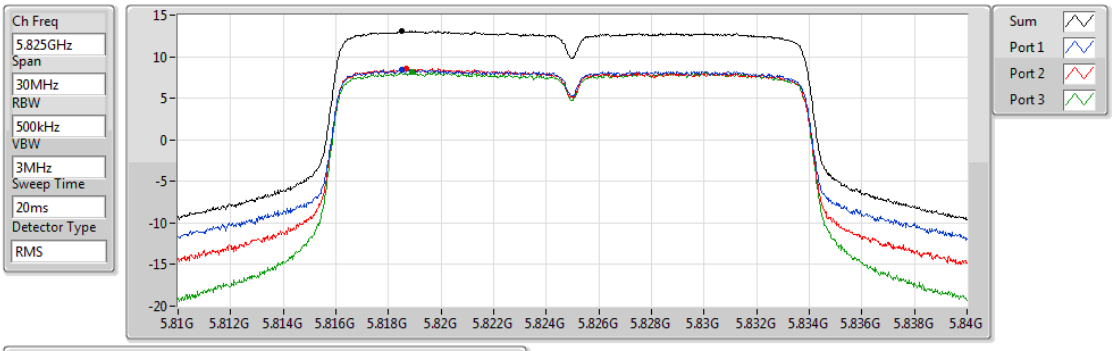
5785MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
13.40	13.40	8.74	8.65	8.81

802.11ac VHT20_Nss1,(MCS0)_3TX PSD

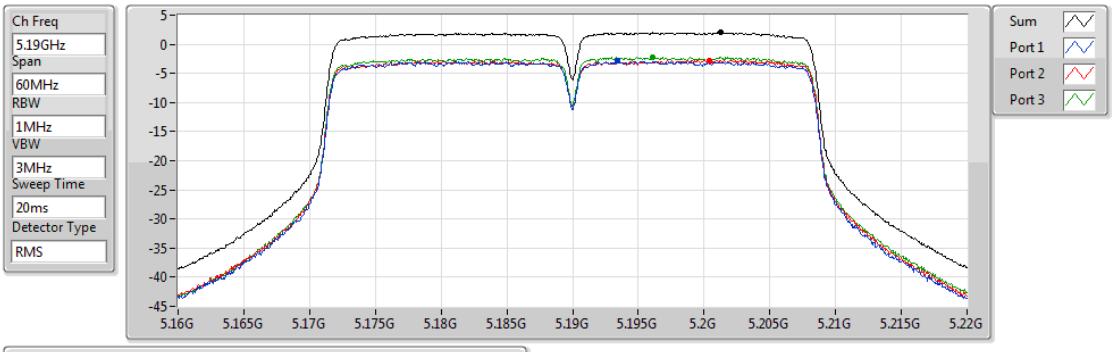
5825MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
13.06	13.06	8.48	8.56	8.10

802.11ac VHT40_Nss1,(MCS0)_3TX PSD

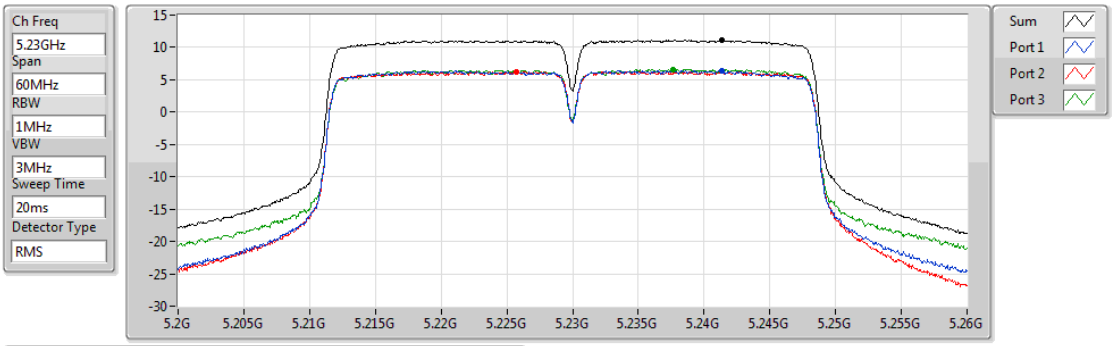
5190MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.04	2.04	-2.91	-2.79	-2.19

802.11ac VHT40_Nss1,(MCS0)_3TX PSD

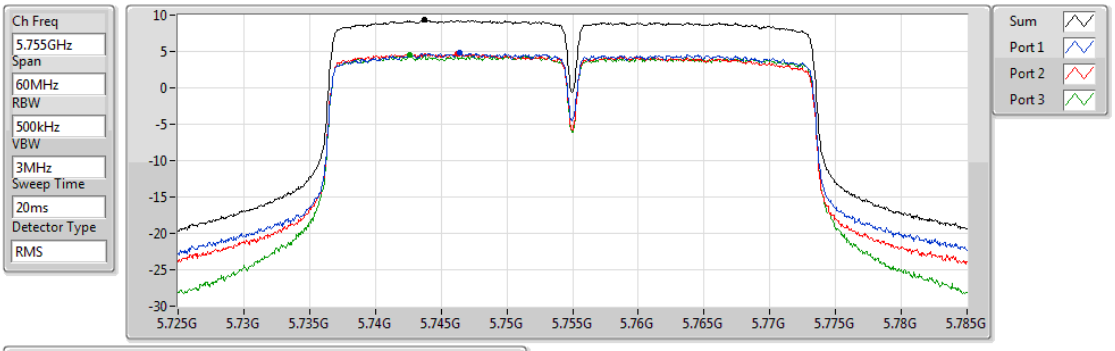
5230MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
11.13	11.13	6.43	6.25	6.60

802.11ac VHT40_Nss1,(MCS0)_3TX PSD

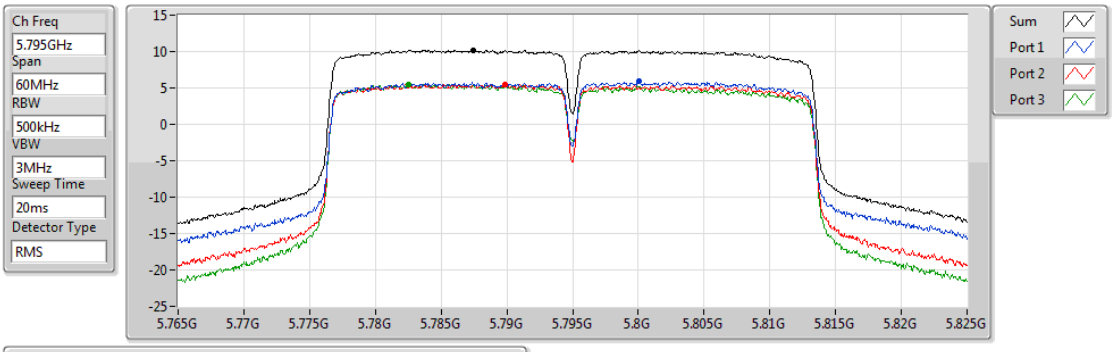
5755MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.31	9.31	4.82	4.71	4.47

802.11ac VHT40_Nss1,(MCS0)_3TX PSD

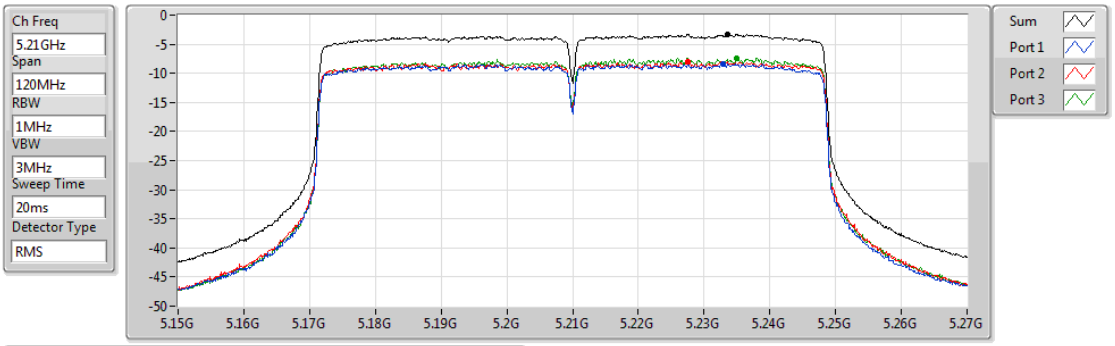
5795MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
10.22	10.22	5.87	5.49	5.54

802.11ac VHT80_Nss1,(MCS0)_3TX PSD

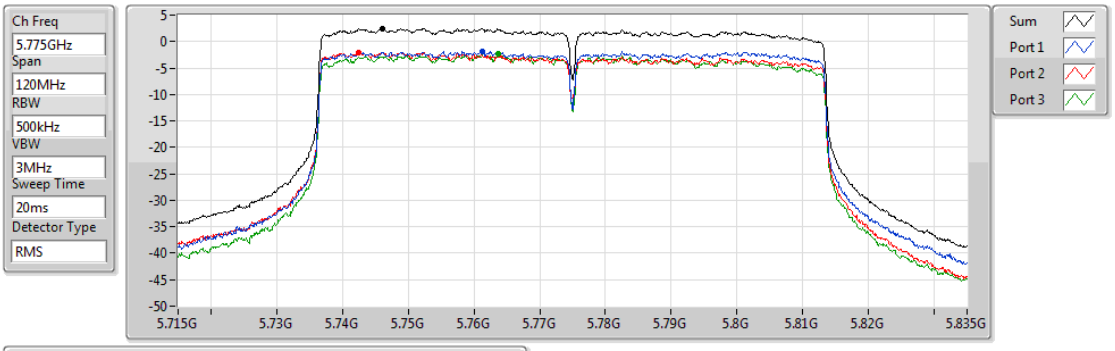
5210MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-3.23	-3.23	-8.36	-7.99	-7.40

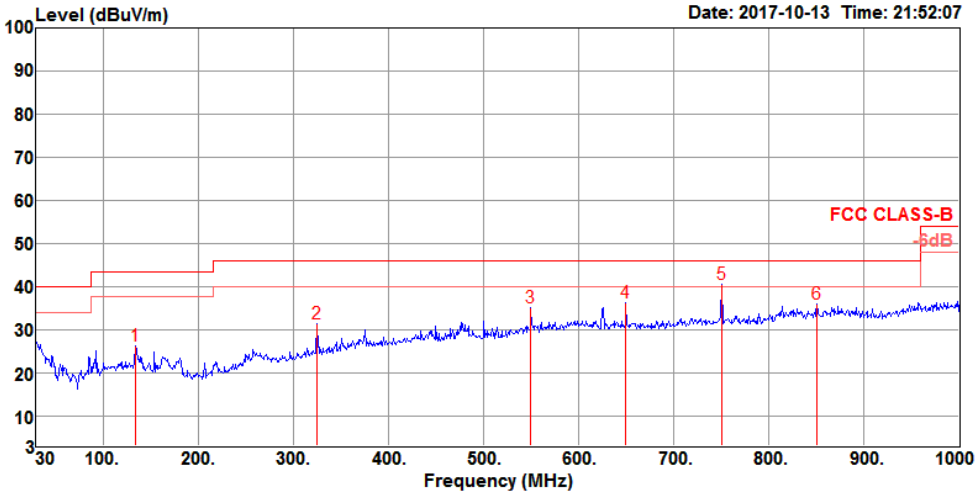
802.11ac VHT80_Nss1,(MCS0)_3TX PSD

5775MHz



Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.37	2.37	-1.87	-2.09	-2.34

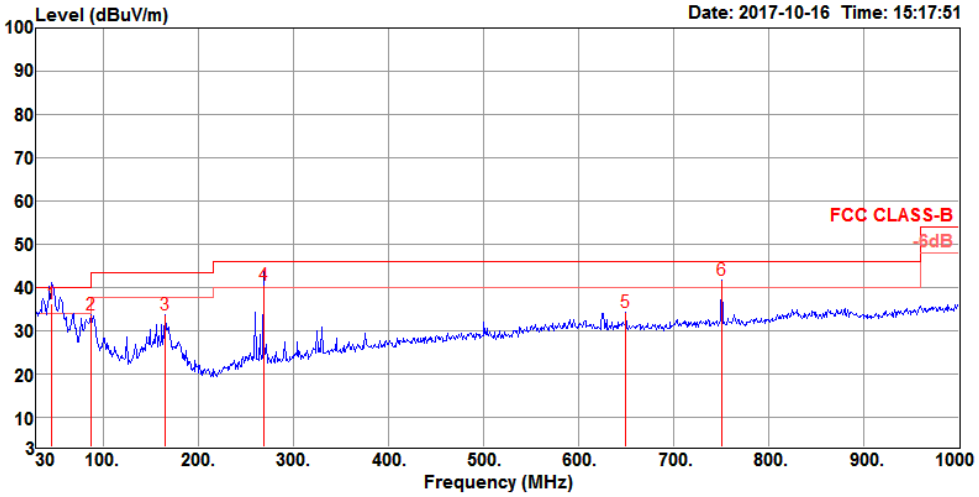
RSE below 1GHz Result			
Operating Mode	2	**Polarization**	Horizontal
Operating Function	Normal Link / EUT in Z axis		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	133.79	26.33	43.50	-17.17	39.31	1.97	17.58	32.53	300	285	Peak	HORIZONTAL
2	324.88	31.36	46.00	-14.64	41.09	3.14	19.57	32.44	100	66	Peak	HORIZONTAL
3	549.92	35.20	46.00	-10.80	39.30	4.13	24.30	32.53	200	121	Peak	HORIZONTAL
4	649.83	36.29	46.00	-9.71	39.41	4.52	24.90	32.54	200	11	Peak	HORIZONTAL
5	750.71	40.54	46.00	-5.46	42.53	4.87	25.56	32.42	100	355	Peak	HORIZONTAL
6	850.62	36.01	46.00	-9.99	36.64	5.19	26.24	32.06	200	78	Peak	HORIZONTAL

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

RSE below 1GHz Result			
Operating Mode	2	**Polarization**	Vertical
Operating Function	Normal Link / EUT in Z axis		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	46.49	36.19	40.00	-3.81	51.99	1.12	15.58	32.50	100	156	QP	VERTICAL
2	87.23	33.76	40.00	-6.24	50.60	1.57	14.14	32.55	100	121	Peak	VERTICAL
3	165.80	33.57	43.50	-9.93	48.11	2.21	15.76	32.51	100	154	Peak	VERTICAL
4	268.62	40.63	46.00	-5.37	50.92	2.84	19.32	32.45	100	180	Peak	VERTICAL
5	649.83	34.11	46.00	-11.89	37.23	4.52	24.90	32.54	100	296	Peak	VERTICAL
6	750.71	41.64	46.00	-4.36	43.63	4.87	25.56	32.42	100	156	Peak	VERTICAL

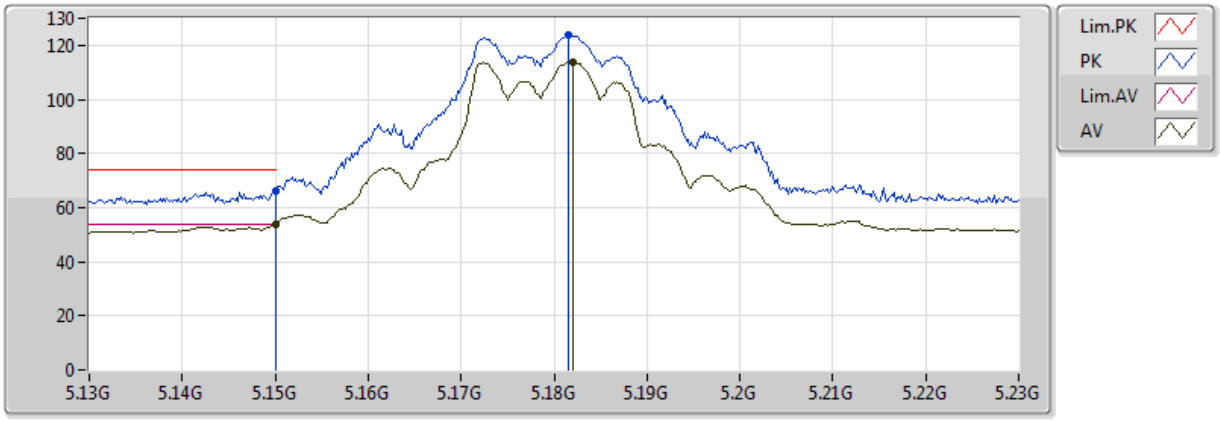
Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.725-5.85GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT20_Nss1,(MCS0)_3TX	Pass	PK	17.47732G	68.18	68.20	-0.02	19.82	3	Vertical	2	1.72	-

802.11a_Nss1,(6Mbps)_3TX

5180MHz_TX

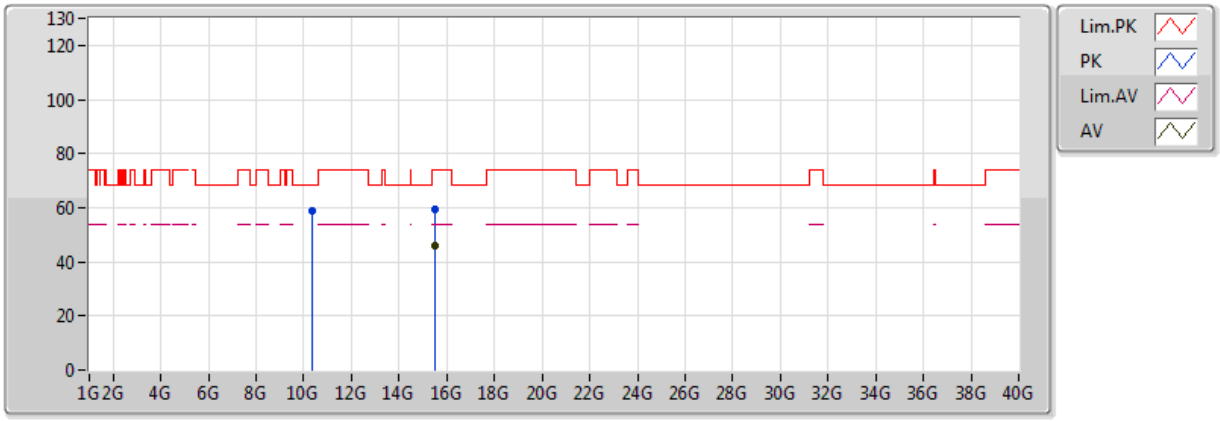


20171018
EUT Y_3TX(Dipole)
Setting 20
01-J-6-10
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.149995G	53.91	54.00	-0.09	4.17	3	Vertical	4	1.49
AV	5.182G	113.90	Inf	-Inf	4.24	3	Vertical	4	1.49
PK	5.149995G	66.20	74.00	-7.80	4.17	3	Vertical	4	1.49
PK	5.1816G	124.06	Inf	-Inf	4.24	3	Vertical	4	1.49

802.11a_Nss1,(6Mbps)_3TX

5180MHz_TX

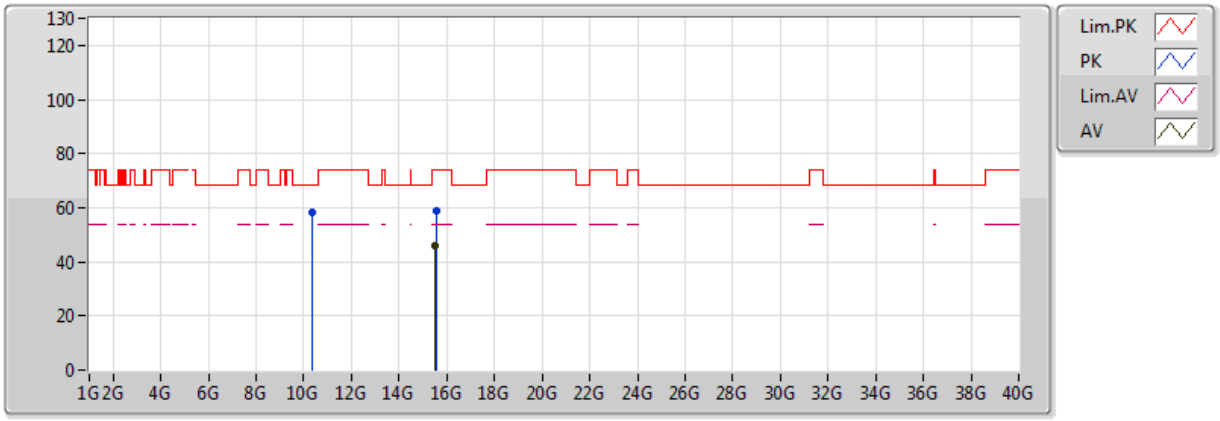


20171018
EUT Y_3TX(Dipole)
Setting 20
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.5351G	46.21	54.00	-7.79	13.54	3	Vertical	103	1.24
PK	10.3595G	58.84	68.20	-9.36	12.12	3	Vertical	334	1.73
PK	15.5228G	59.15	74.00	-14.85	13.55	3	Vertical	103	1.24

802.11a_Nss1,(6Mbps)_3TX

5180MHz_TX

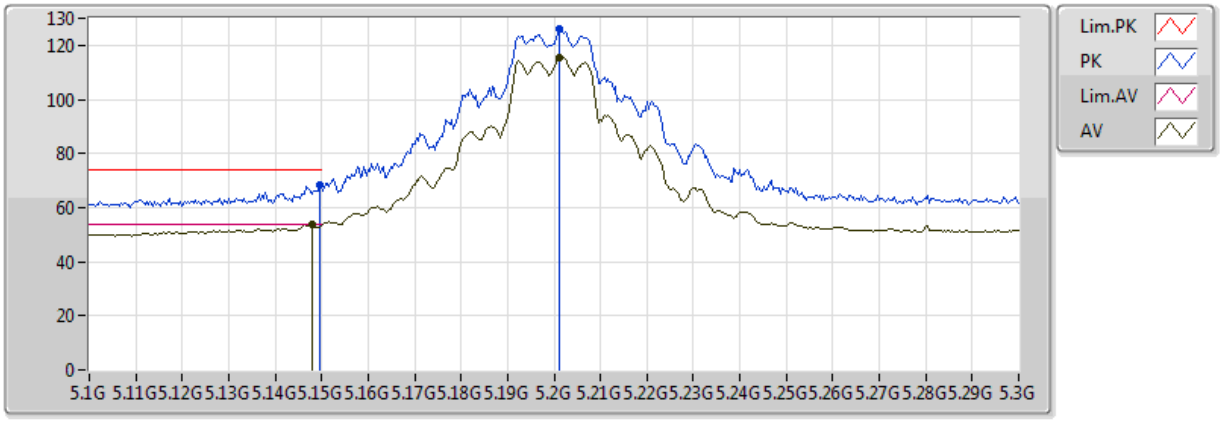


20171018
EUT Y_3TX(Dipole)
Setting 20
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.5248G	46.16	54.00	-7.84	13.55	3	Horizontal	269	1.01
PK	10.3582G	58.27	68.20	-9.93	12.12	3	Horizontal	307	1.20
PK	15.5609G	58.78	74.00	-15.22	13.51	3	Horizontal	269	1.01

802.11a_Nss1,(6Mbps)_3TX

5200MHz_TX

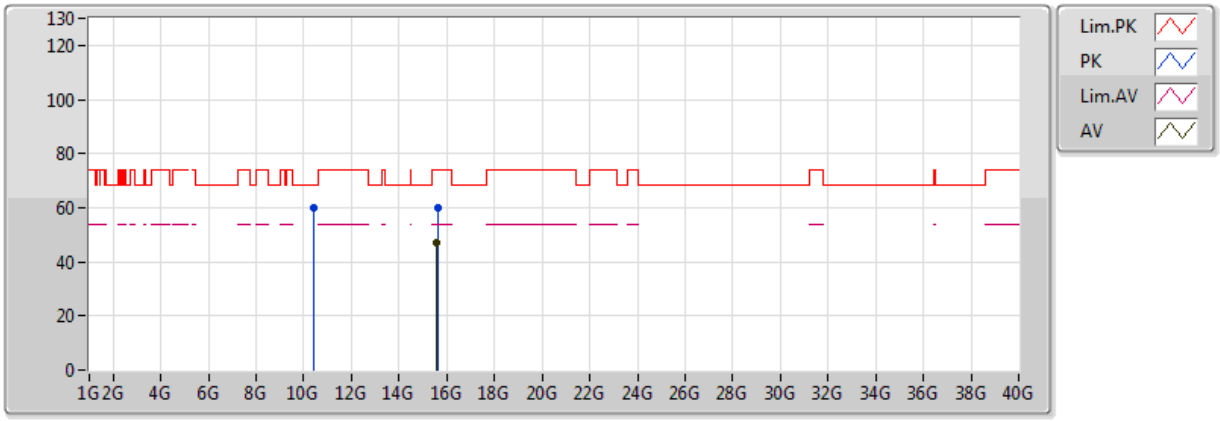


20171018
EUT Y_3TX(Dipole)
Setting 24.5
01-J-6-10
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.148G	53.73	54.00	-0.27	4.17	3	Vertical	354	1.48
AV	5.2012G	115.41	Inf	-Inf	4.28	3	Vertical	354	1.48
PK	5.1496G	68.48	74.00	-5.52	4.17	3	Vertical	354	1.48
PK	5.2012G	125.80	Inf	-Inf	4.28	3	Vertical	354	1.48

802.11a_Nss1,(6Mbps)_3TX

5200MHz_TX

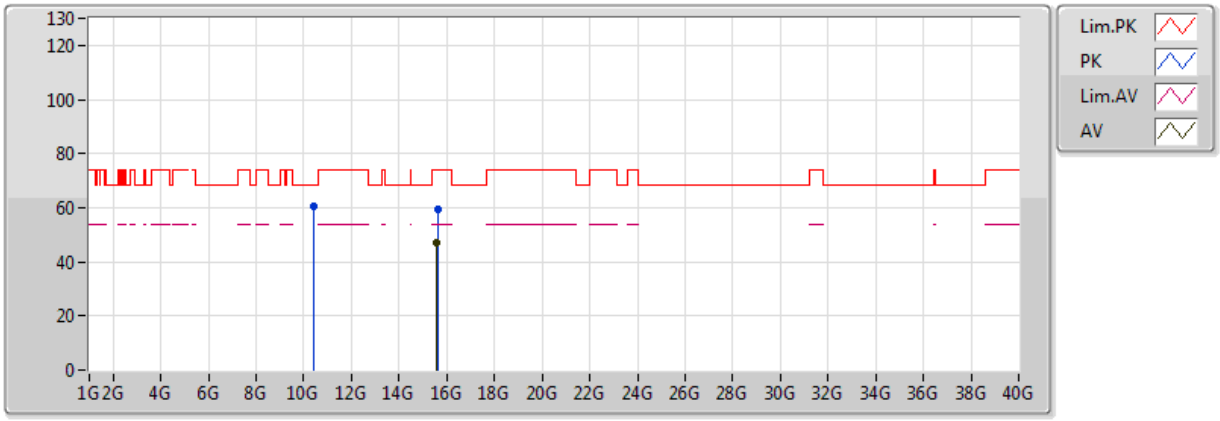


20171018
EUT Y_3TX(Dipole)
Setting 24.5
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.5973G	47.10	54.00	-6.90	13.47	3	Vertical	54	1.71
PK	10.3994G	60.15	68.20	-8.05	12.14	3	Vertical	334	1.73
PK	15.606G	59.85	74.00	-14.15	13.46	3	Vertical	54	1.71

802.11a_Nss1,(6Mbps)_3TX

5200MHz_TX

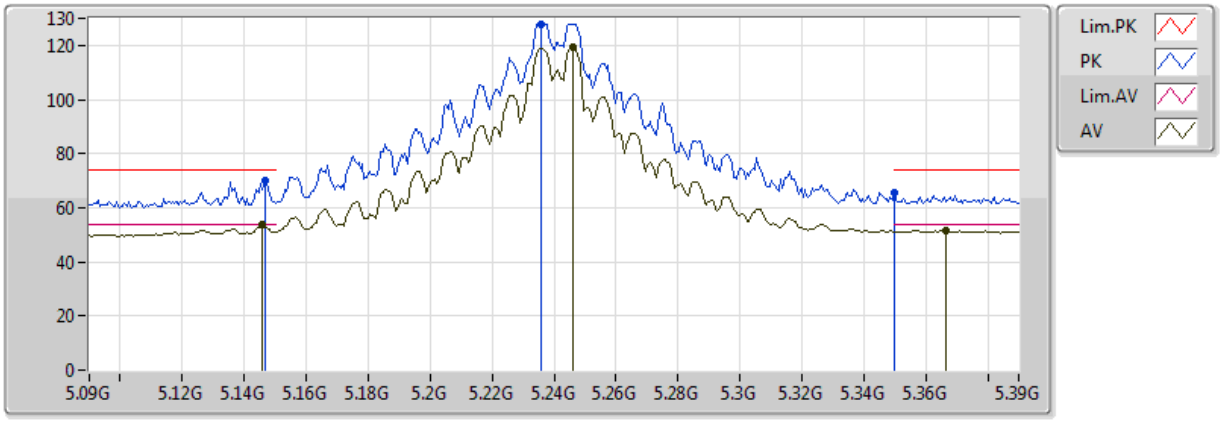


20171018
EUT Y_3TX(Dipole)
Setting 24.5
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.5966G	47.33	54.00	-6.67	13.47	3	Horizontal	222	1.08
PK	10.4017G	60.35	68.20	-7.85	12.14	3	Horizontal	306	1.33
PK	15.6086G	59.14	74.00	-14.86	13.45	3	Horizontal	222	1.08

802.11a_Nss1,(6Mbps)_3TX

5240MHz_TX

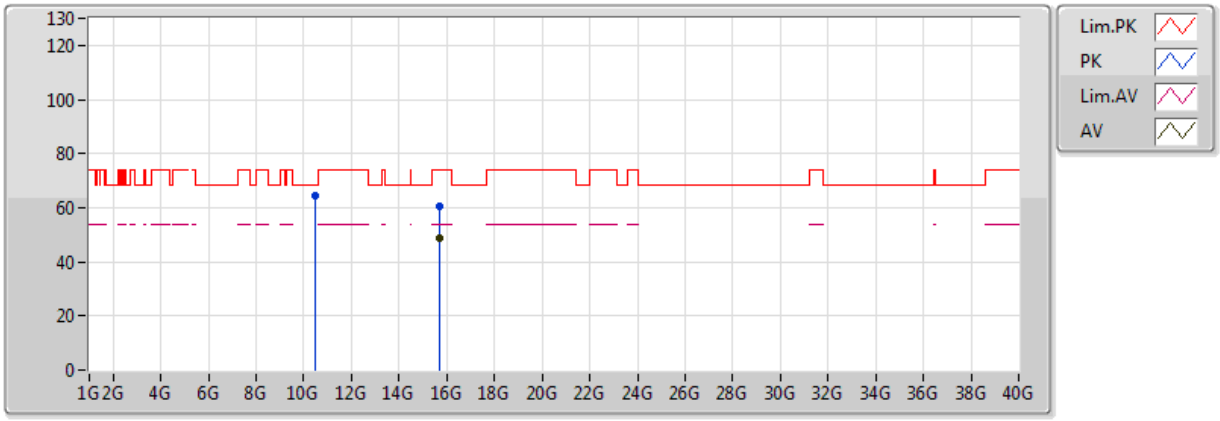


20171018
EUT Y_3TX(Dipole)
Setting 30.5
01-J-6-10
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.1458G	53.69	54.00	-0.31	4.16	3	Vertical	2	1.50
AV	5.246G	119.30	Inf	-Inf	4.36	3	Vertical	2	1.50
AV	5.3666G	51.57	54.00	-2.43	4.54	3	Vertical	2	1.50
PK	5.147G	69.80	74.00	-4.20	4.16	3	Vertical	2	1.50
PK	5.2358G	128.01	Inf	-Inf	4.34	3	Vertical	2	1.50
PK	5.350005G	65.36	74.00	-8.64	4.52	3	Vertical	2	1.50

802.11a_Nss1,(6Mbps)_3TX

5240MHz_TX

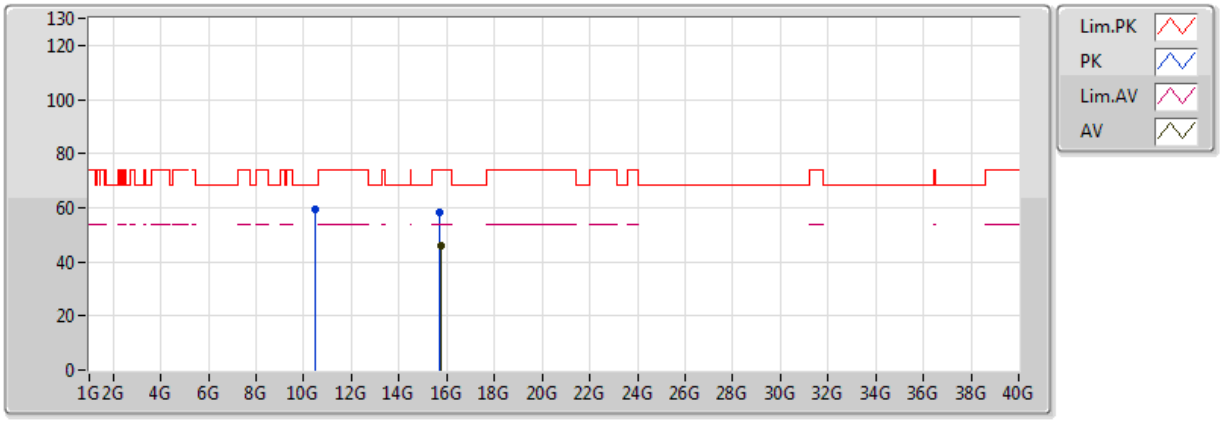


20171018
EUT Y_3TX(Dipole)
Setting 30.5
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.7215G	48.57	54.00	-5.43	13.32	3	Vertical	22	1.82
PK	10.4796G	64.30	68.20	-3.90	12.18	3	Vertical	30	1.90
PK	15.7206G	60.46	74.00	-13.54	13.32	3	Vertical	22	1.82

802.11a_Nss1,(6Mbps)_3TX

5240MHz_TX

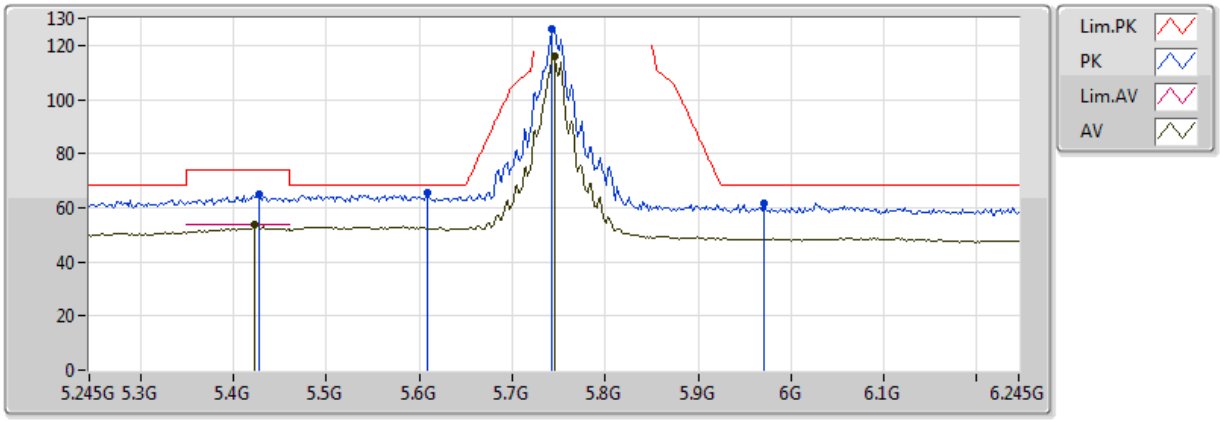


20171018
EUT Y_3TX(Dipole)
Setting 30.5
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.7284G	45.76	54.00	-8.24	13.32	3	Horizontal	19	1.34
PK	10.4805G	59.67	68.20	-8.53	12.18	3	Horizontal	20	2.24
PK	15.7197G	58.17	74.00	-15.83	13.33	3	Horizontal	19	1.34

802.11a_Nss1,(6Mbps)_3TX

5745MHz_TX

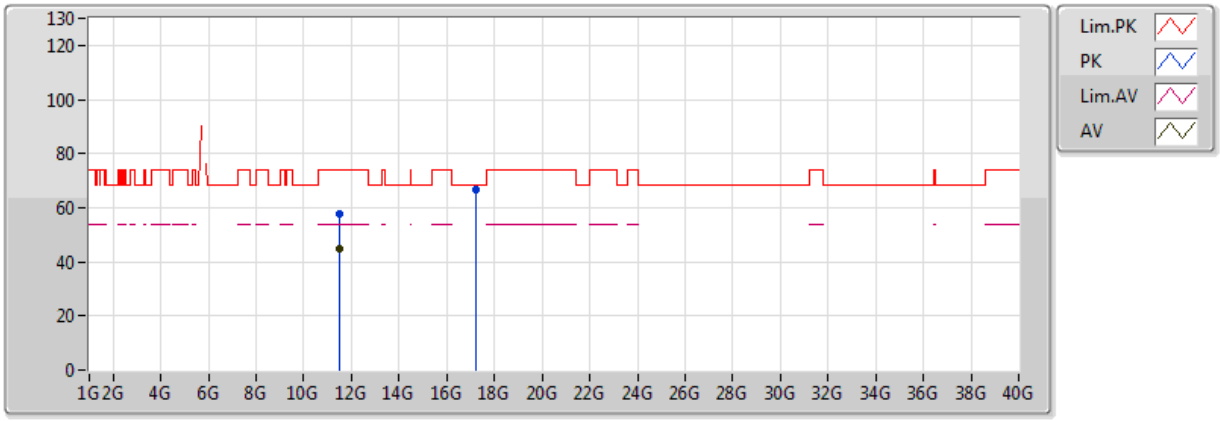


20171018
EUT Y_3TX(Dipole)
Setting 28
01-J-6-10
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.423G	53.72	54.00	-0.28	4.66	3	Vertical	135	1.94
AV	5.745G	116.16	Inf	-Inf	5.72	3	Vertical	135	1.94
PK	5.427G	65.03	74.00	-8.97	4.67	3	Vertical	135	1.94
PK	5.609G	65.35	68.20	-2.85	5.34	3	Vertical	135	1.94
PK	5.743G	126.02	Inf	-Inf	5.72	3	Vertical	135	1.94
PK	5.971G	61.50	68.20	-6.70	6.51	3	Vertical	135	1.94

802.11a_Nss1,(6Mbps)_3TX

5745MHz_TX

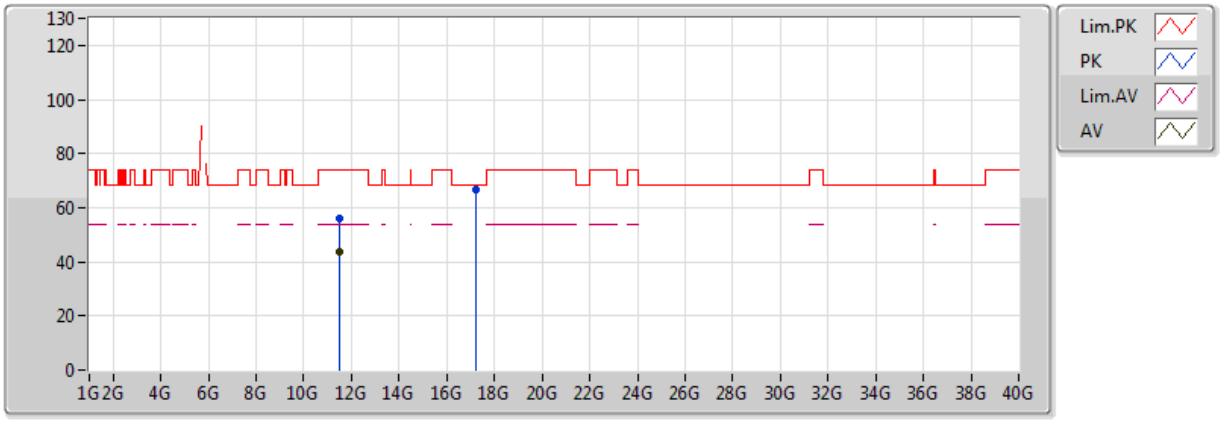


20171018
EUT Y_3TX(Dipole)
Setting 28
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.4879G	44.72	54.00	-9.28	12.31	3	Vertical	198	1.64
PK	11.48772G	57.82	74.00	-16.18	12.31	3	Vertical	198	1.64
PK	17.2341G	66.77	68.20	-1.43	17.81	3	Vertical	350	1.77

802.11a_Nss1,(6Mbps)_3TX

5745MHz_TX

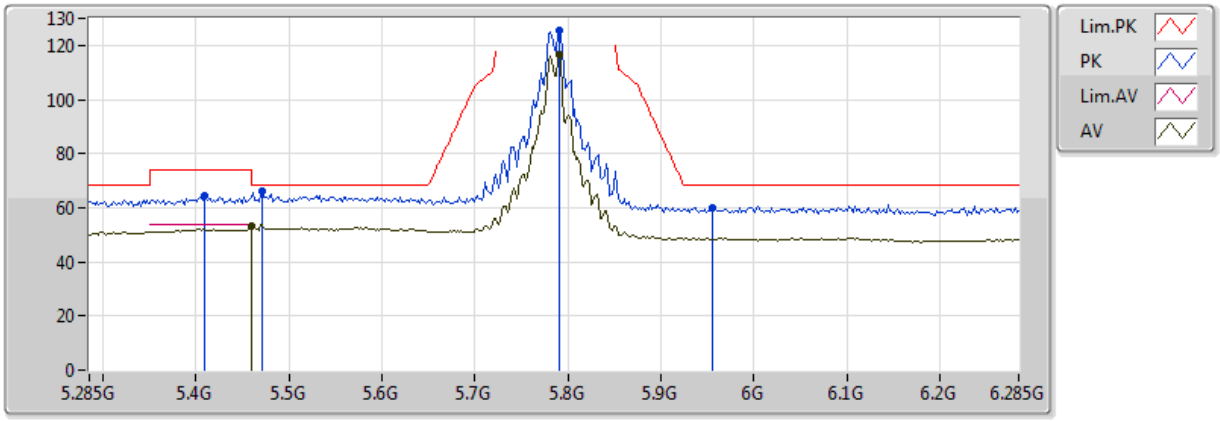


20171018
EUT Y_3TX(Dipole)
Setting 28
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.48736G	43.53	54.00	-10.47	12.31	3	Horizontal	138	1.25
PK	11.48838G	56.25	74.00	-17.75	12.31	3	Horizontal	138	1.25
PK	17.22642G	66.92	68.20	-1.28	17.79	3	Horizontal	0	2.57

802.11a_Nss1,(6Mbps)_3TX

5785MHz_TX

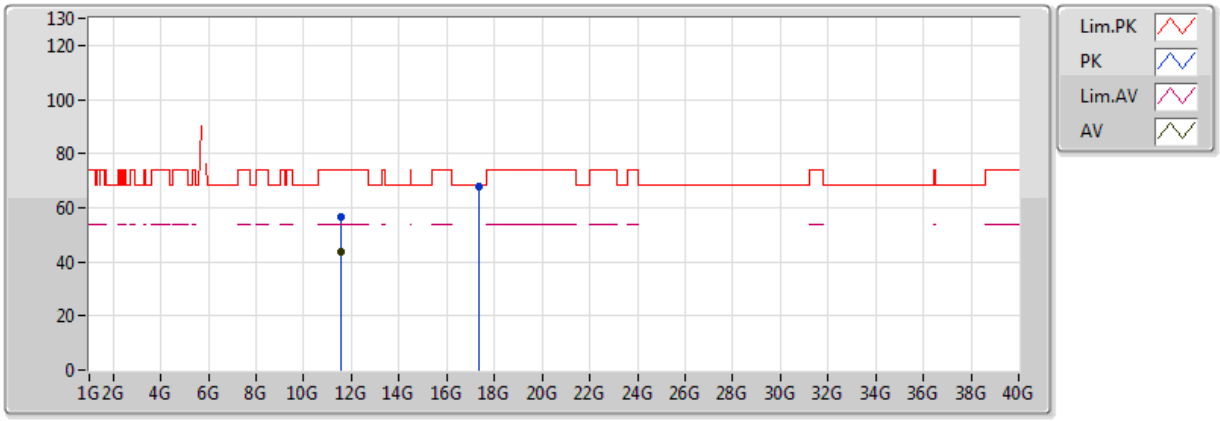


20171018
EUT Y_3TX(Dipole)
Setting 28
01-J-6-10
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.459995G	53.32	54.00	-0.68	4.78	3	Vertical	148	1.92
AV	5.791G	116.30	Inf	-Inf	5.85	3	Vertical	148	1.92
PK	5.409G	64.40	74.00	-9.60	4.62	3	Vertical	148	1.92
PK	5.471G	66.28	68.20	-1.92	4.81	3	Vertical	148	1.92
PK	5.791G	125.32	Inf	-Inf	5.85	3	Vertical	148	1.92
PK	5.955G	59.84	68.20	-8.36	6.45	3	Vertical	148	1.92

802.11a_Nss1,(6Mbps)_3TX

5785MHz_TX

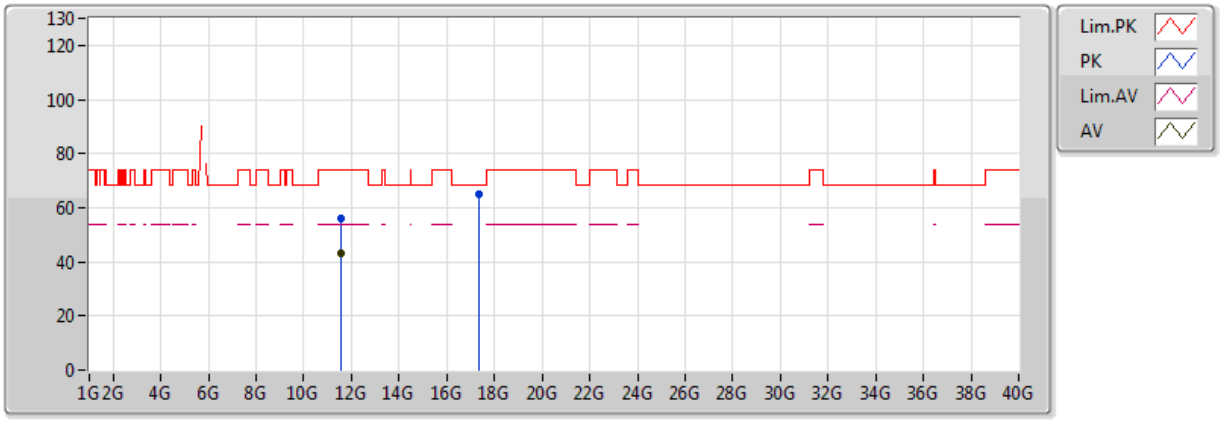


20171018
EUT Y_3TX(Dipole)
Setting 28
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.56952G	43.80	54.00	-10.20	12.29	3	Vertical	32	1.28
PK	11.56952G	56.44	74.00	-17.56	12.29	3	Vertical	32	1.28
PK	17.35596G	67.87	68.20	-0.33	18.04	3	Vertical	0	1.79

802.11a_Nss1,(6Mbps)_3TX

5785MHz_TX

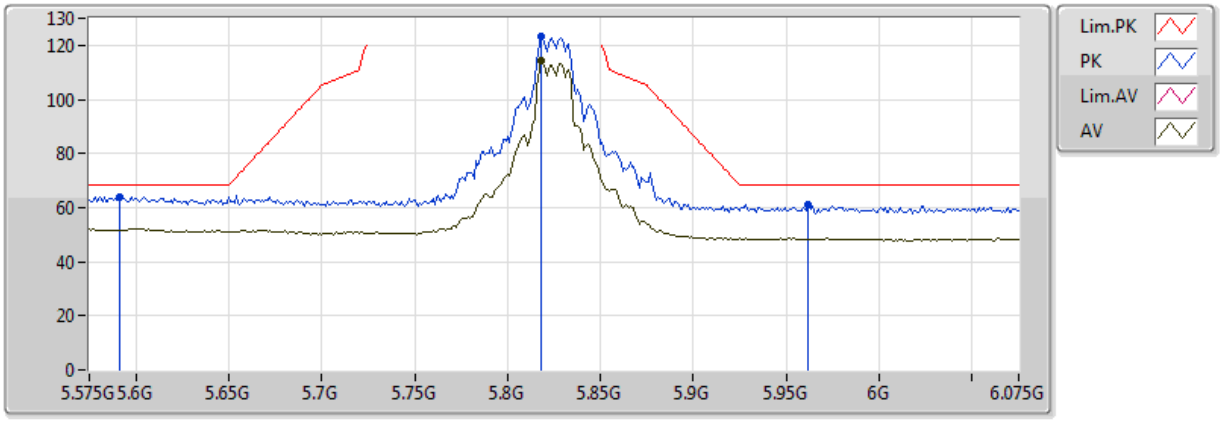


20171018
EUT Y_3TX(Dipole)
Setting 28
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.57012G	43.26	54.00	-10.74	12.29	3	Horizontal	313	1.75
PK	11.56994G	56.08	74.00	-17.92	12.29	3	Horizontal	313	1.75
PK	17.35788G	64.80	68.20	-3.40	18.04	3	Horizontal	290	1.50

802.11a_Nss1,(6Mbps)_3TX

5825MHz_TX

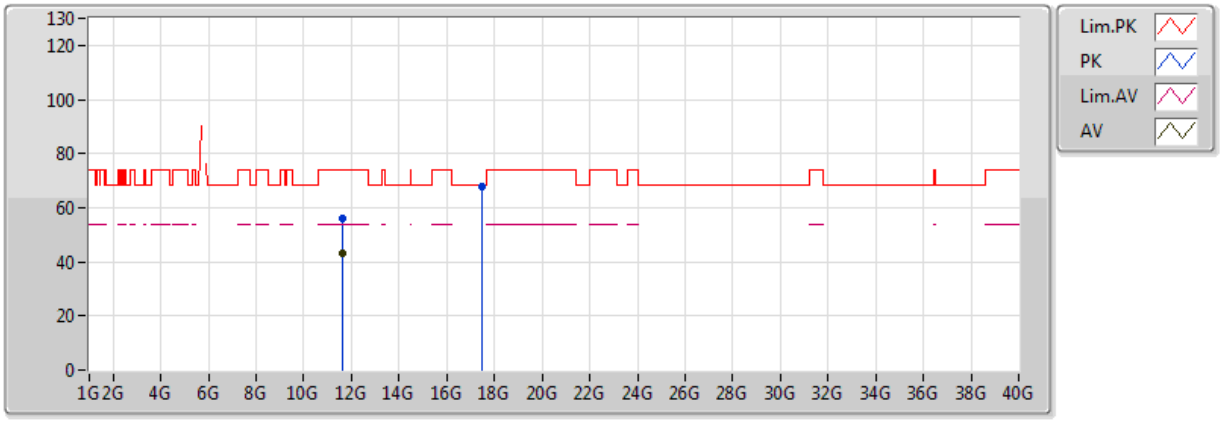


20171018
EUT Y_3TX(Dipole)
Setting 25
01-J-6-10
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.818G	114.14	Inf	-Inf	5.94	3	Vertical	0	1.97
PK	5.591G	64.10	68.20	-4.10	5.27	3	Vertical	0	1.97
PK	5.818G	123.14	Inf	-Inf	5.94	3	Vertical	0	1.97
PK	5.962G	61.20	68.20	-7.00	6.48	3	Vertical	0	1.97

802.11a_Nss1,(6Mbps)_3TX

5825MHz_TX

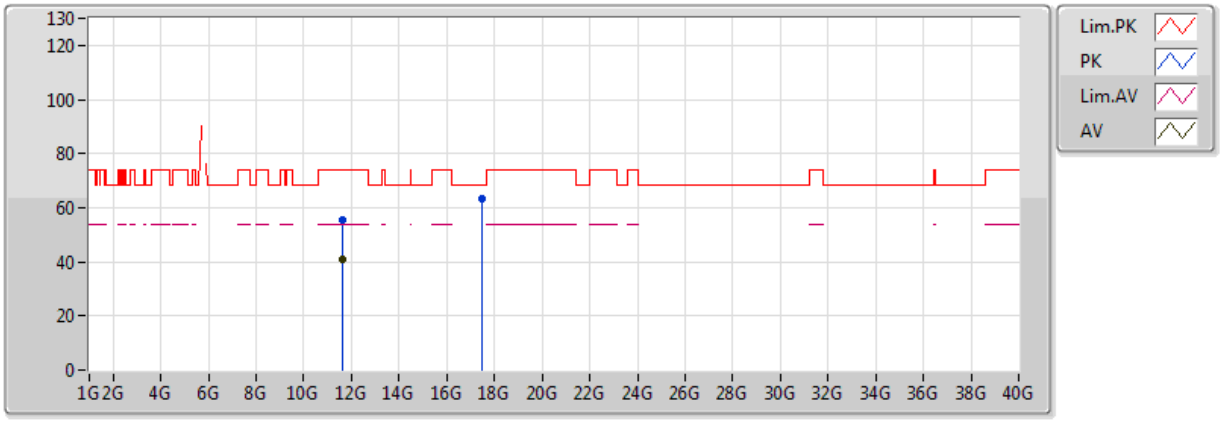


20171018
EUT Y_3TX(Dipole)
Setting 25
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.64982G	42.99	54.00	-11.01	12.28	3	Vertical	224	2.01
PK	11.6494G	56.30	74.00	-17.70	12.28	3	Vertical	224	2.01
PK	17.48226G	67.92	68.20	-0.28	18.28	3	Vertical	14	1.82

802.11a_Nss1,(6Mbps)_3TX

5825MHz_TX

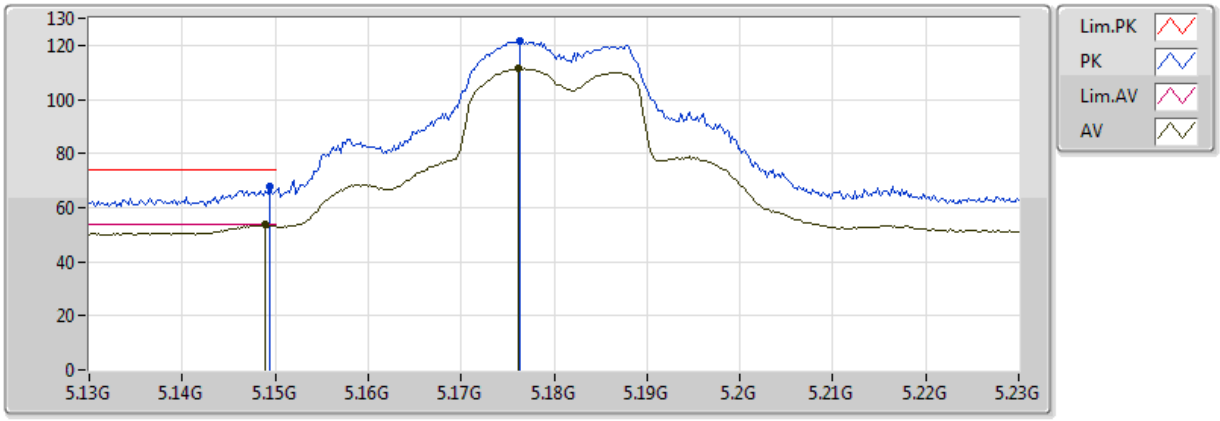


20171018
EUT Y_3TX(Dipole)
Setting 25
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.64898G	41.15	54.00	-12.85	12.28	3	Horizontal	11	1.12
PK	11.6494G	55.60	74.00	-18.40	12.28	3	Horizontal	11	1.12
PK	17.46762G	63.56	68.20	-4.64	18.25	3	Horizontal	288	2.90

802.11ac VHT20_Nss1,(MCS0)_3TX

5180MHz_TX

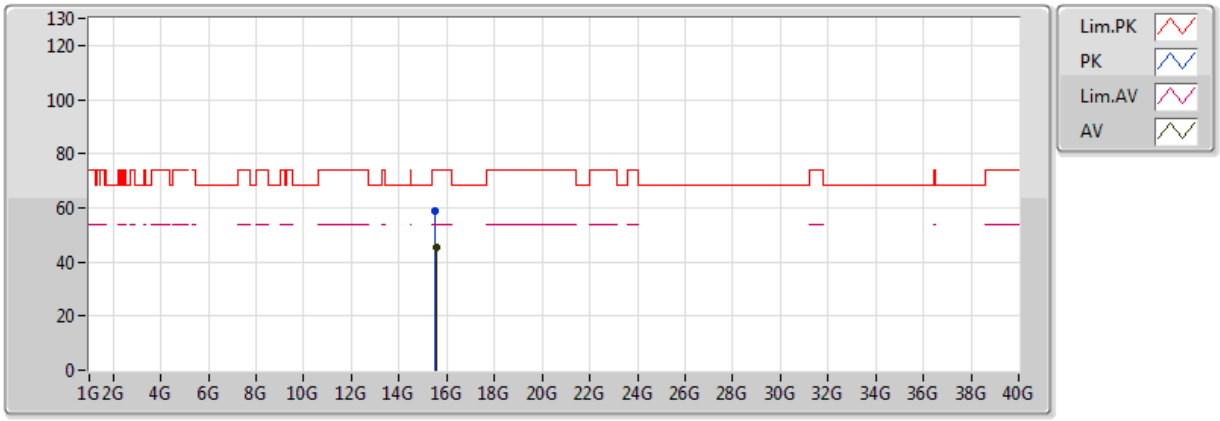


20171018
EUT Y_3TX(Dipole)
Setting 20
01-J-6-10
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.149G	53.62	54.00	-0.38	4.17	3	Vertical	0	1.62
AV	5.1762G	111.37	Inf	-Inf	4.23	3	Vertical	0	1.62
PK	5.1494G	67.54	74.00	-6.46	4.17	3	Vertical	0	1.62
PK	5.1764G	121.34	Inf	-Inf	4.23	3	Vertical	0	1.62

802.11ac VHT20_Nss1,(MCS0)_3TX

5180MHz_TX

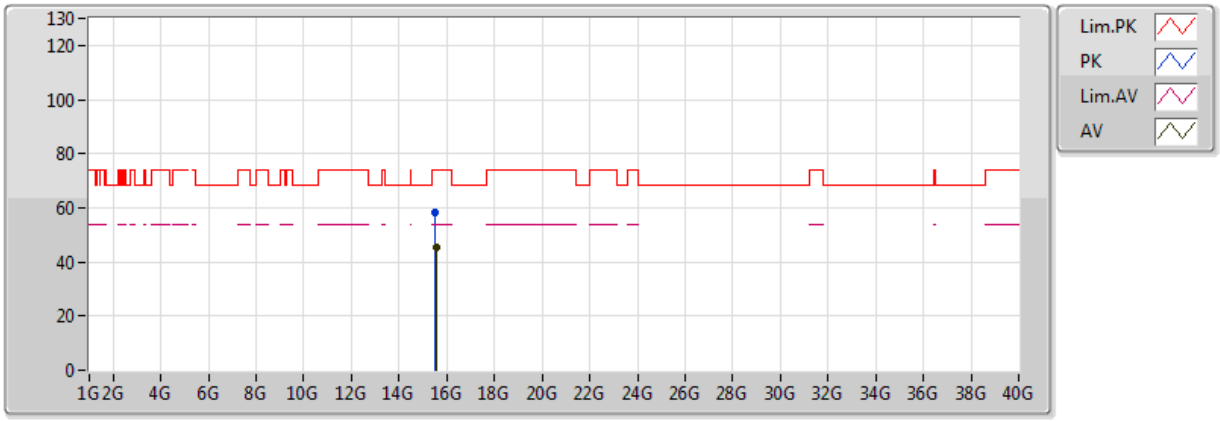


20171018
EUT Y_3TX(Dipole)
Setting 20
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.55452G	45.12	54.00	-8.88	13.52	3	Vertical	13	1.78
PK	15.53388G	58.56	74.00	-15.44	13.54	3	Vertical	13	1.78

802.11ac VHT20_Nss1,(MCS0)_3TX

5180MHz_TX

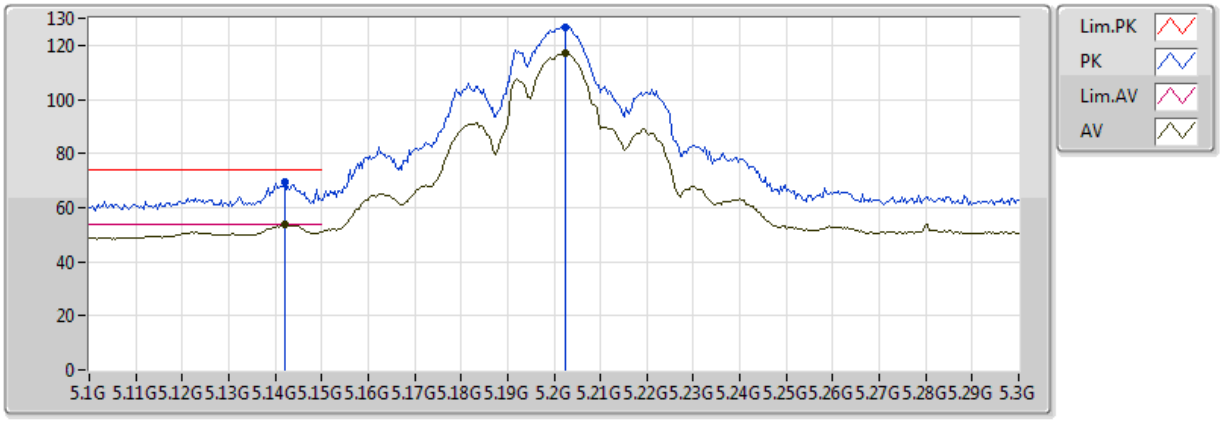


20171018
EUT Y_3TX(Dipole)
Setting 20
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.53934G	45.17	54.00	-8.83	13.53	3	Horizontal	277	1.08
PK	15.52704G	58.12	74.00	-15.88	13.55	3	Horizontal	277	1.08

802.11ac VHT20_Nss1,(MCS0)_3TX

5200MHz_TX

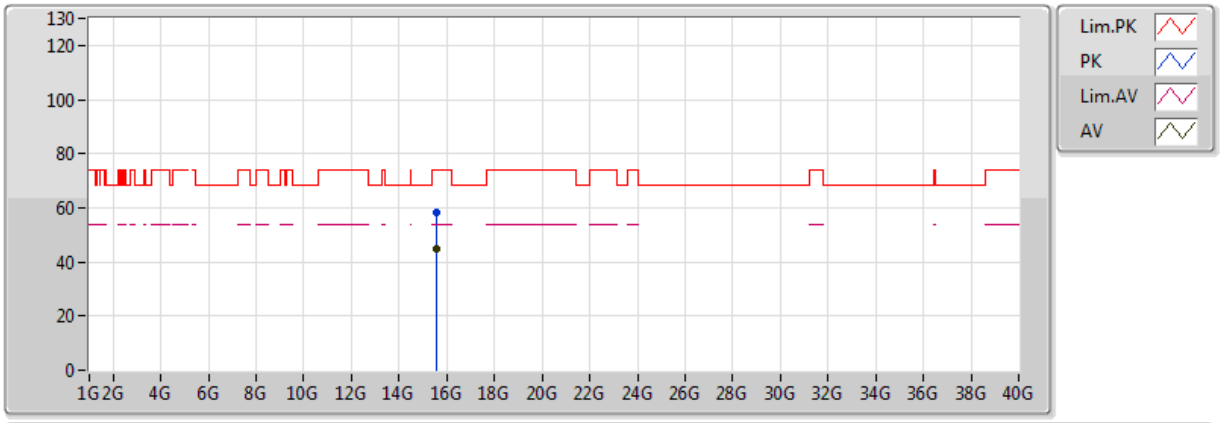


20171018
EUT Y_3TX(Dipole)
Setting 25
01-J-6-10
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.142G	53.59	54.00	-0.41	4.15	3	Vertical	0	1.47
AV	5.2024G	117.34	Inf	-Inf	4.28	3	Vertical	0	1.47
PK	5.142G	69.46	74.00	-4.54	4.15	3	Vertical	0	1.47
PK	5.2024G	126.76	Inf	-Inf	4.28	3	Vertical	0	1.47

802.11ac VHT20_Nss1,(MCS0)_3TX

5200MHz_TX

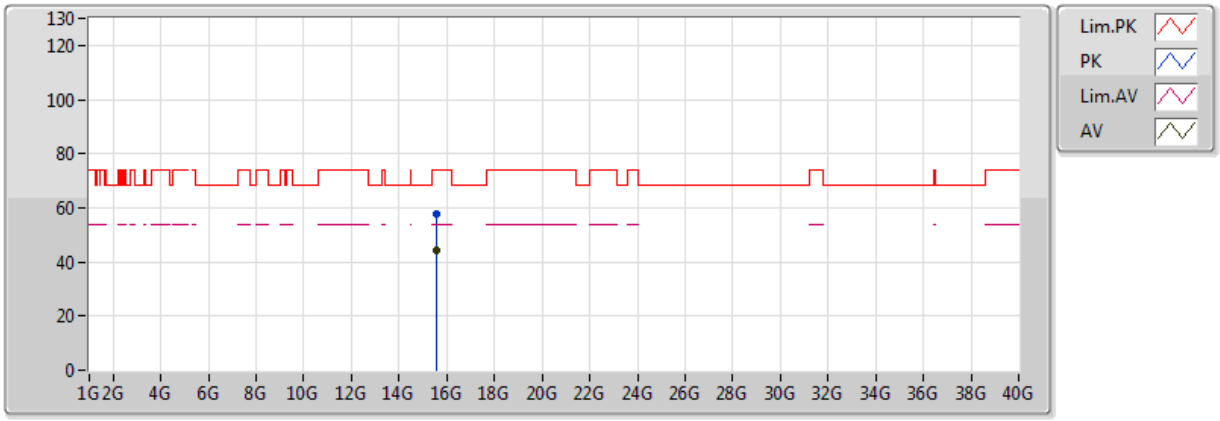


20171018
EUT Y_3TX(Dipole)
Setting 25
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.59772G	44.58	54.00	-9.42	13.47	3	Vertical	195	1.81
PK	15.588G	58.41	74.00	-15.59	13.48	3	Vertical	195	1.81

802.11ac VHT20_Nss1,(MCS0)_3TX

5200MHz_TX

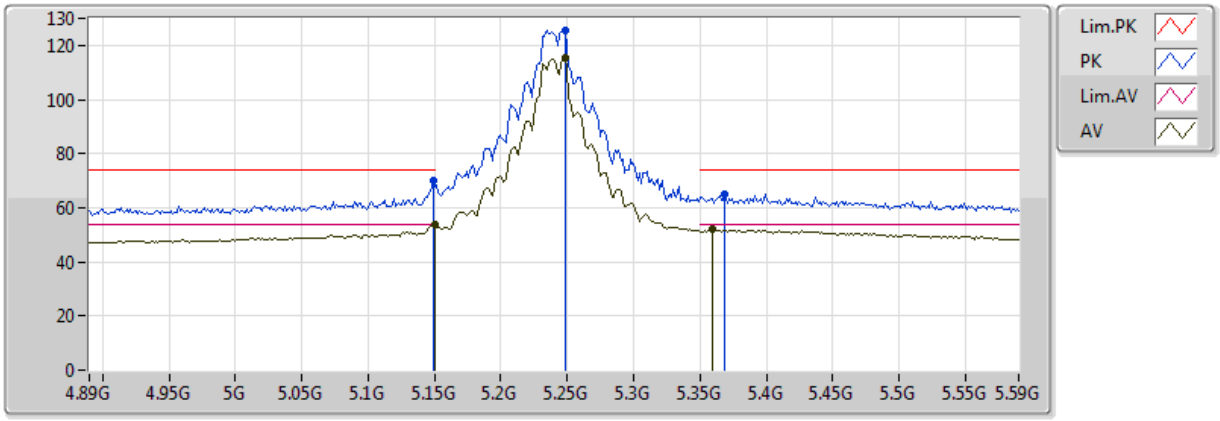


20171018
EUT Y_3TX(Dipole)
Setting 25
01-J-6
FSP(100080)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.59088G	44.46	54.00	-9.54	13.47	3	Horizontal	187	1.75
PK	15.58932G	57.84	74.00	-16.16	13.48	3	Horizontal	187	1.75

802.11ac VHT20_Nss1,(MCS0)_3TX

5240MHz_TX

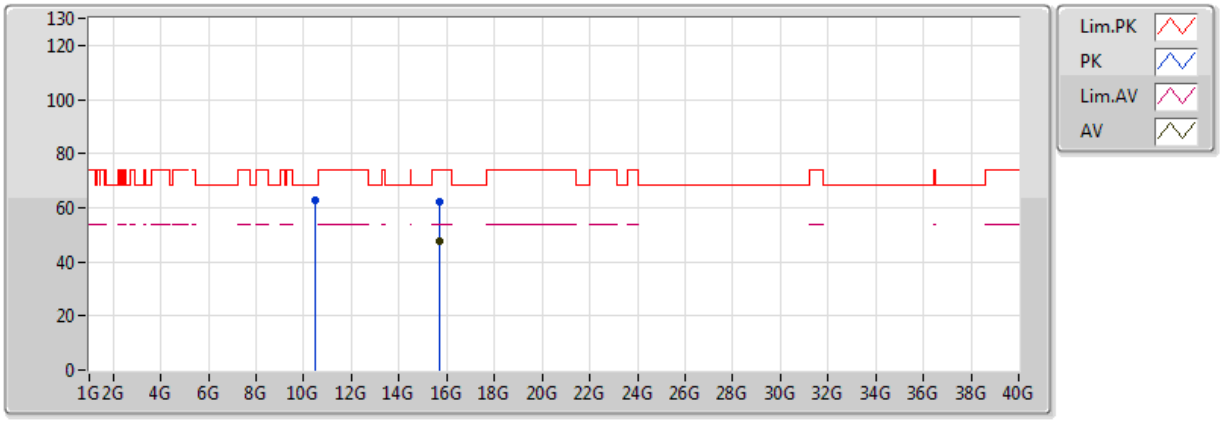


20171018
EUT Y_3TX(Dipole)
Setting 30
03-W-3-10
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.149995G	53.62	54.00	-0.38	5.93	3	Vertical	123	1.50
AV	5.2484G	115.47	Inf	-Inf	6.12	3	Vertical	123	1.50
AV	5.359G	51.91	54.00	-2.09	6.42	3	Vertical	123	1.50
PK	5.149G	69.94	74.00	-4.06	5.93	3	Vertical	123	1.50
PK	5.2484G	125.72	Inf	-Inf	6.12	3	Vertical	123	1.50
PK	5.3688G	64.97	74.00	-9.03	6.44	3	Vertical	123	1.50

802.11ac VHT20_Nss1,(MCS0)_3TX

5240MHz_TX

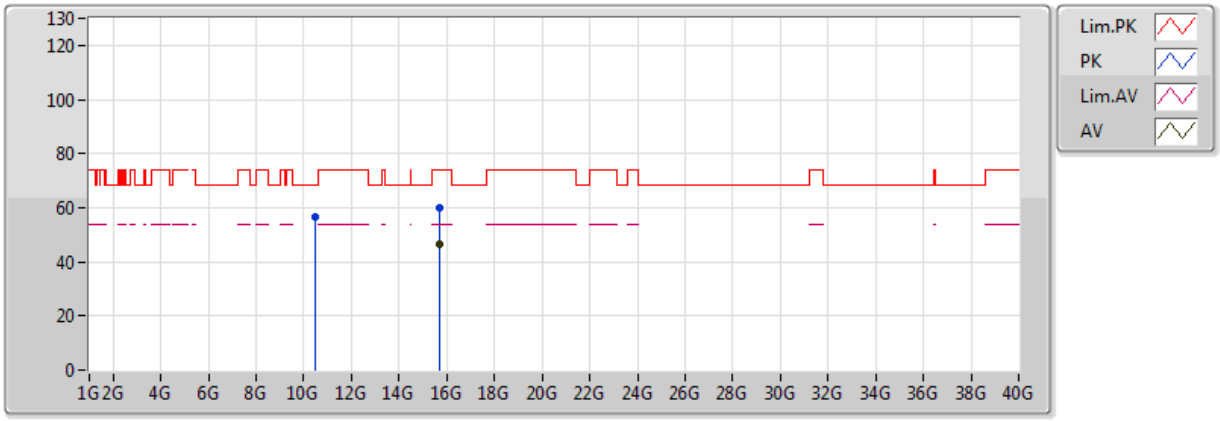


20171018
EUT Y_3TX(Dipole)
Setting 30
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.71864G	47.80	54.00	-6.20	15.64	3	Vertical	2	2.57
PK	10.4758G	62.51	68.20	-5.69	13.08	3	Vertical	27	1.78
PK	15.71988G	61.92	74.00	-12.08	15.63	3	Vertical	2	2.57

802.11ac VHT20_Nss1,(MCS0)_3TX

5240MHz_TX

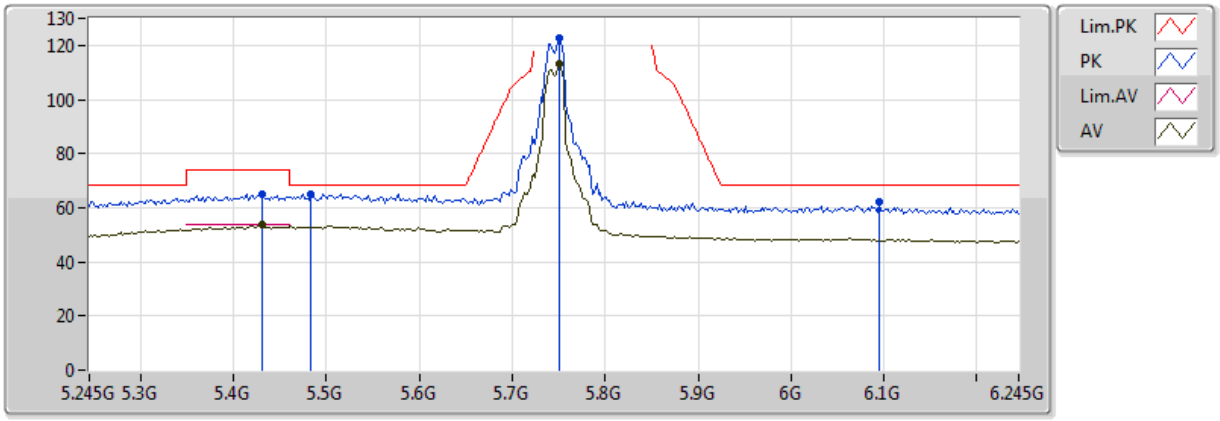


20171018
EUT Y_3TX(Dipole)
Setting 30
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.7219G	46.51	54.00	-7.49	15.62	3	Horizontal	18	1.72
PK	10.48006G	56.85	68.20	-11.35	13.08	3	Horizontal	20	2.16
PK	15.72146G	60.07	74.00	-13.93	15.63	3	Horizontal	18	1.72

802.11ac VHT20_Nss1,(MCS0)_3TX

5745MHz_TX

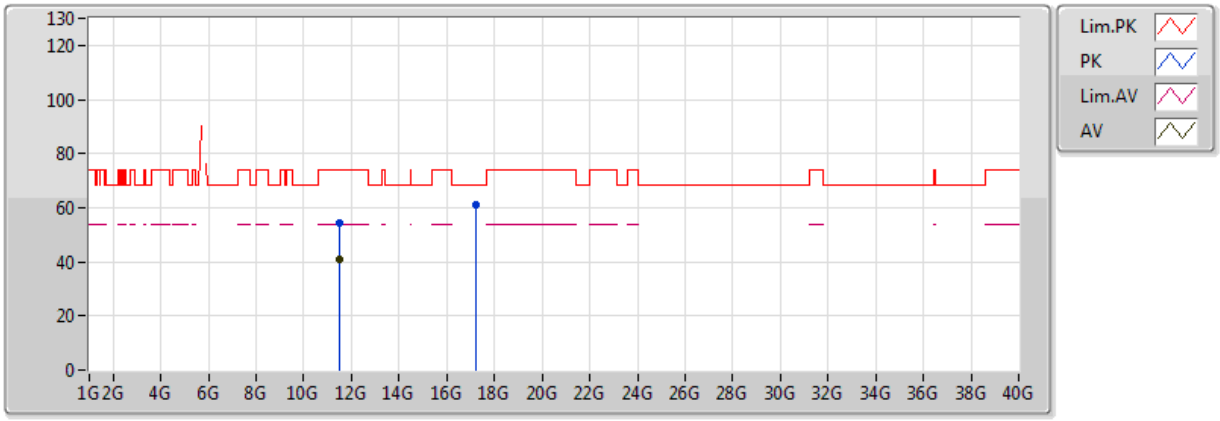


20171018
EUT Y_3TX(Dipole)
Setting 23
03-W-3-10
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.431G	53.97	54.00	-0.03	6.63	3	Vertical	34	1.81
AV	5.751G	113.06	Inf	-Inf	6.94	3	Vertical	34	1.81
PK	5.431G	65.20	74.00	-8.80	6.63	3	Vertical	34	1.81
PK	5.483G	65.28	68.20	-2.92	6.80	3	Vertical	34	1.81
PK	5.751G	122.58	Inf	-Inf	6.94	3	Vertical	34	1.81
PK	6.095G	61.99	68.20	-6.21	7.41	3	Vertical	34	1.81

802.11ac VHT20_Nss1,(MCS0)_3TX

5745MHz_TX

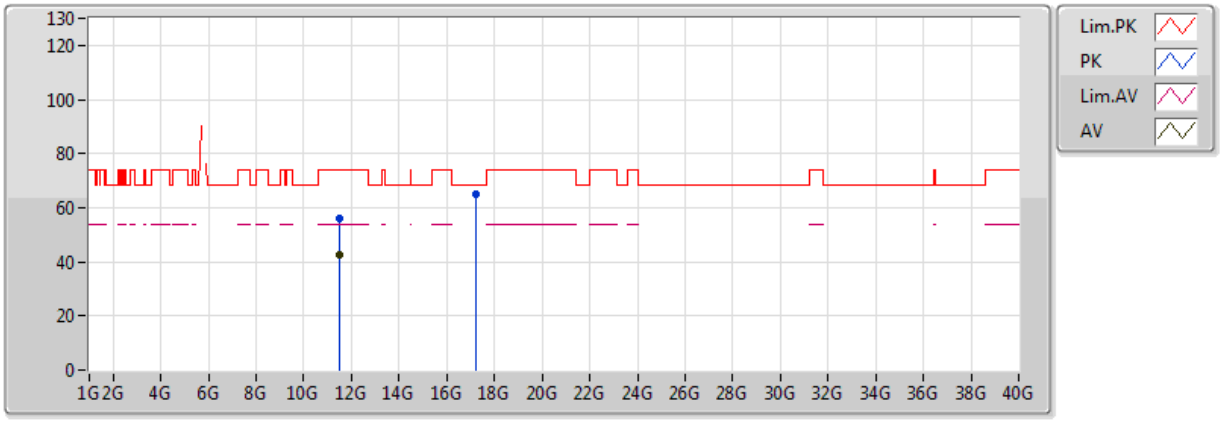


20171018
EUT Y_3TX(Dipole)
Setting 23
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.48992G	40.99	54.00	-13.01	13.93	3	Vertical	33	1.48
PK	11.49148G	54.43	74.00	-19.57	13.93	3	Vertical	33	1.48
PK	17.2315G	60.90	68.20	-7.30	18.66	3	Vertical	259	1.53

802.11ac VHT20_Nss1,(MCS0)_3TX

5745MHz_TX

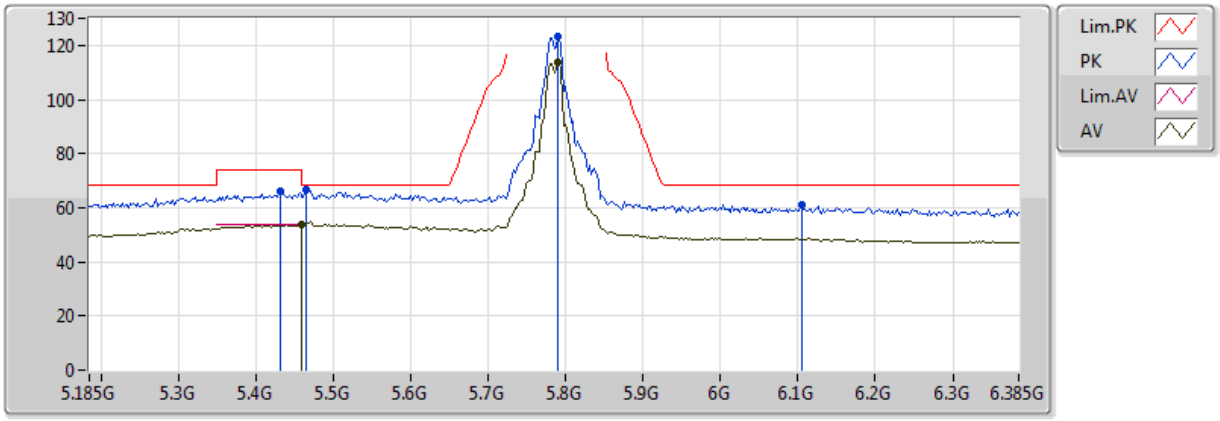


20171018
EUT Y_3TX(Dipole)
Setting 23
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.49016G	42.85	54.00	-11.15	13.93	3	Horizontal	322	1.56
PK	11.4906G	55.93	74.00	-18.07	13.93	3	Horizontal	322	1.56
PK	17.23104G	64.94	68.20	-3.26	18.66	3	Horizontal	8	2.43

802.11ac VHT20_Nss1,(MCS0)_3TX

5785MHz_TX

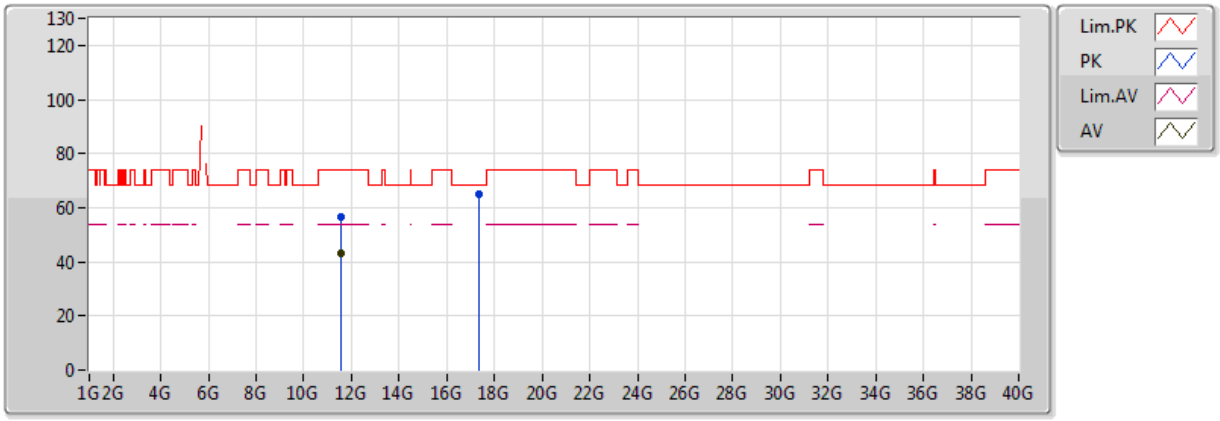


20171018
EUT Y_3TX(Dipole)
Setting 26
03-W-3-10
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.459995G	53.83	54.00	-0.17	6.72	3	Vertical	34	1.78
AV	5.7898G	113.81	Inf	-Inf	6.92	3	Vertical	34	1.78
PK	5.4322G	66.12	74.00	-7.88	6.63	3	Vertical	34	1.78
PK	5.4658G	66.43	68.20	-1.77	6.74	3	Vertical	34	1.78
PK	5.7898G	123.48	Inf	-Inf	6.92	3	Vertical	34	1.78
PK	6.1042G	61.29	68.20	-6.91	7.43	3	Vertical	34	1.78

802.11ac VHT20_Nss1,(MCS0)_3TX

5785MHz_TX

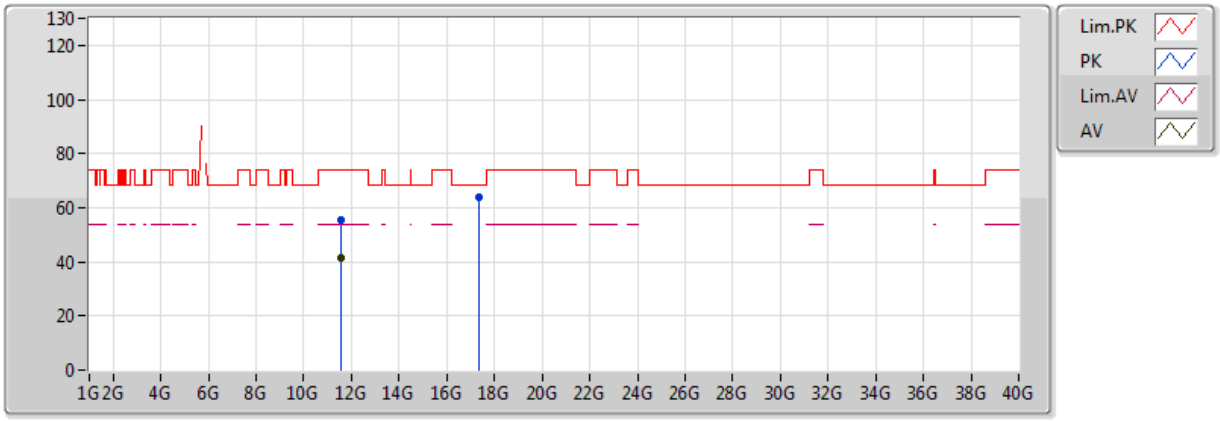


20171018
EUT Y_3TX(Dipole)
Setting 26
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.5686G	43.36	54.00	-10.64	14.00	3	Vertical	230	1.00
PK	11.56738G	56.46	74.00	-17.54	13.99	3	Vertical	230	1.00
PK	17.35622G	65.22	68.20	-2.98	19.25	3	Vertical	1	1.71

802.11ac VHT20_Nss1,(MCS0)_3TX

5785MHz_TX

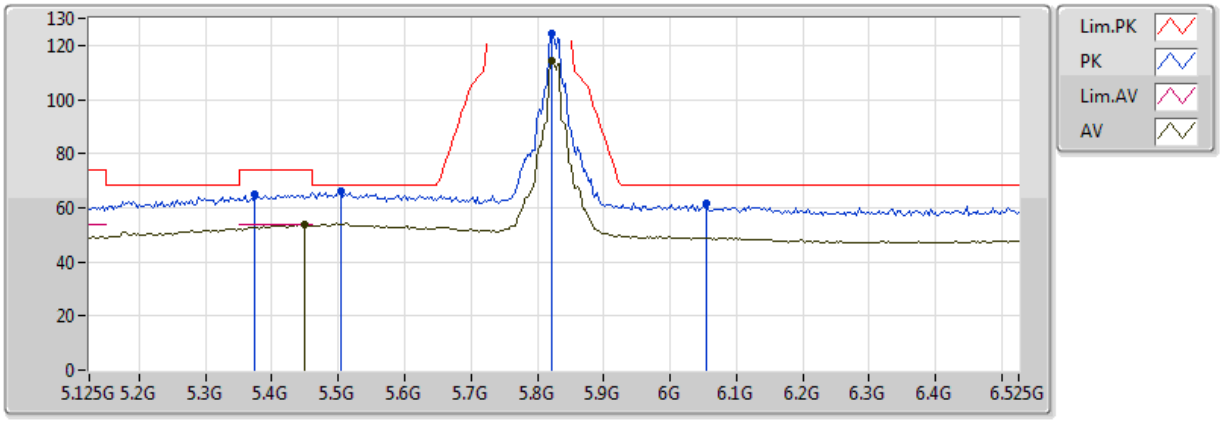


20171018
EUT Y_3TX(Dipole)
Setting 26
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.56716G	41.56	54.00	-12.44	13.99	3	Horizontal	224	1.39
PK	11.5663G	55.58	74.00	-18.42	13.99	3	Horizontal	224	1.39
PK	17.35814G	63.92	68.20	-4.28	19.26	3	Horizontal	13	2.46

802.11ac VHT20_Nss1,(MCS0)_3TX

5825MHz_TX

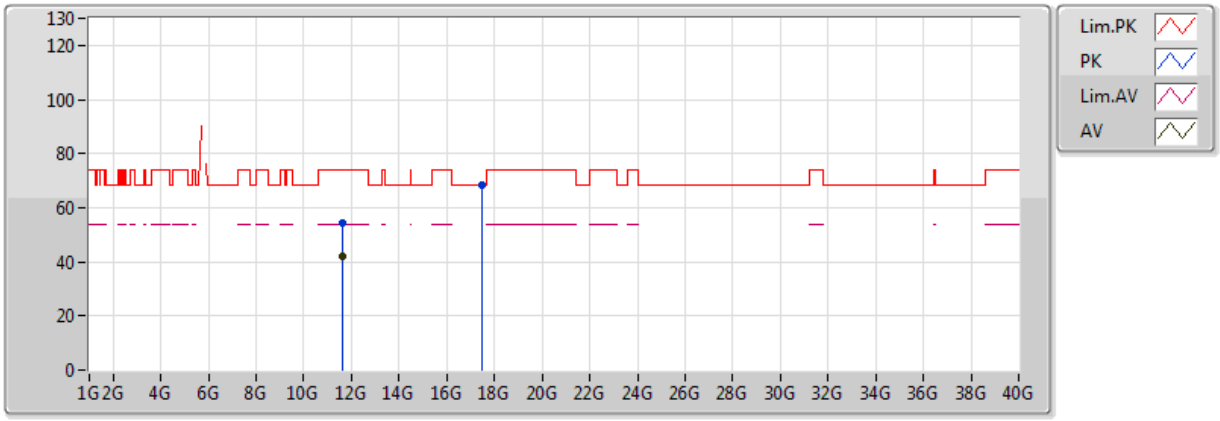


20171018
EUT Y_3TX(Dipole)
Setting 26
03-W-3-10
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.4498G	53.80	54.00	-0.20	6.69	3	Vertical	325	1.87
AV	5.8222G	114.55	Inf	-Inf	6.93	3	Vertical	325	1.87
PK	5.3742G	65.03	74.00	-8.97	6.46	3	Vertical	325	1.87
PK	5.503G	65.91	68.20	-2.29	6.86	3	Vertical	325	1.87
PK	5.8222G	124.24	Inf	-Inf	6.93	3	Vertical	325	1.87
PK	6.0546G	61.58	68.20	-6.62	7.29	3	Vertical	325	1.87

802.11ac VHT20_Nss1,(MCS0)_3TX

5825MHz_TX

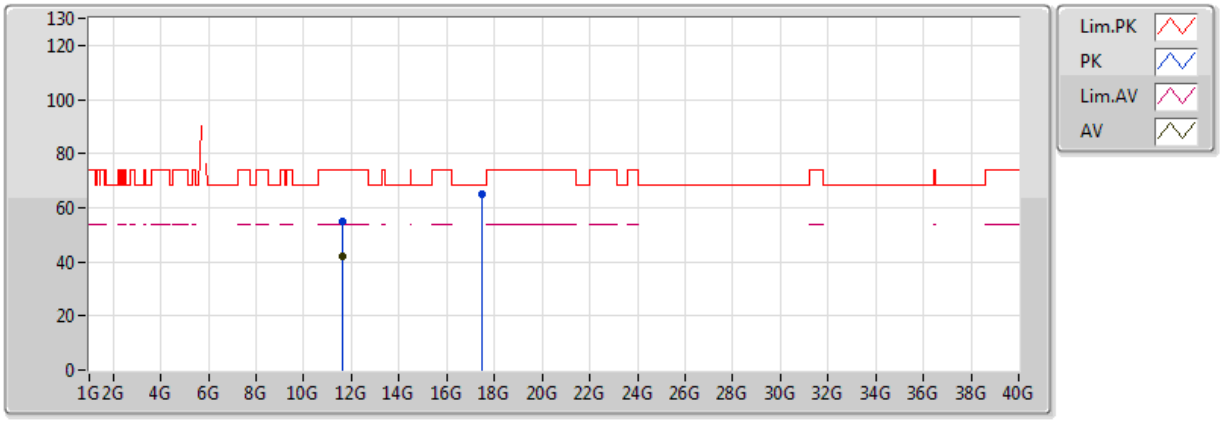


20171018
EUT Y_3TX(Dipole)
Setting 26
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.64504G	41.82	54.00	-12.18	14.06	3	Vertical	207	1.09
PK	11.64764G	54.41	74.00	-19.59	14.07	3	Vertical	207	1.09
PK	17.47732G	68.18	68.20	-0.02	19.82	3	Vertical	2	1.72

802.11ac VHT20_Nss1,(MCS0)_3TX

5825MHz_TX

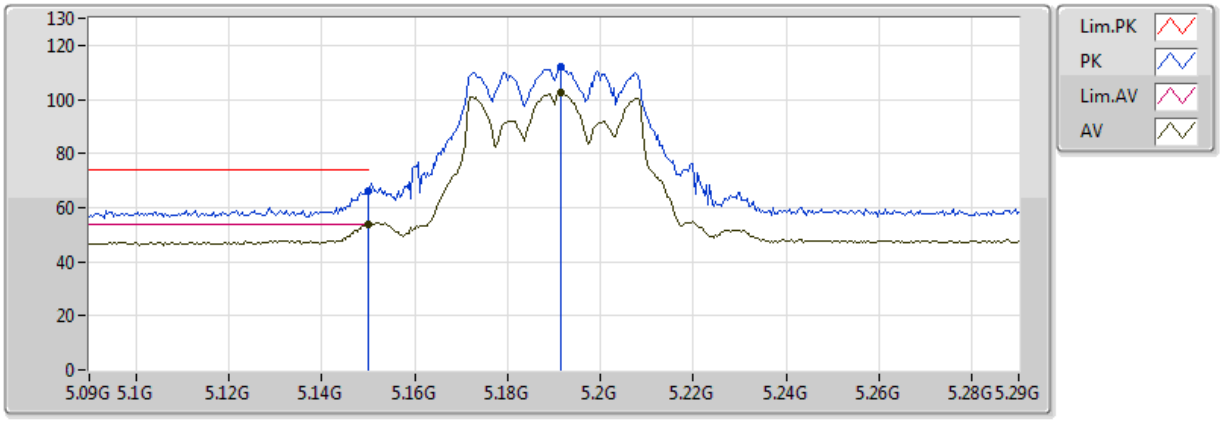


20171018
EUT Y_3TX(Dipole)
Setting 26
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.64946G	42.23	54.00	-11.77	14.07	3	Horizontal	311	1.77
PK	11.6502G	55.04	74.00	-18.96	14.07	3	Horizontal	311	1.77
PK	17.4726G	64.86	68.20	-3.34	19.80	3	Horizontal	17	2.46

802.11ac VHT40_Nss1,(MCS0)_3TX

5190MHz_TX

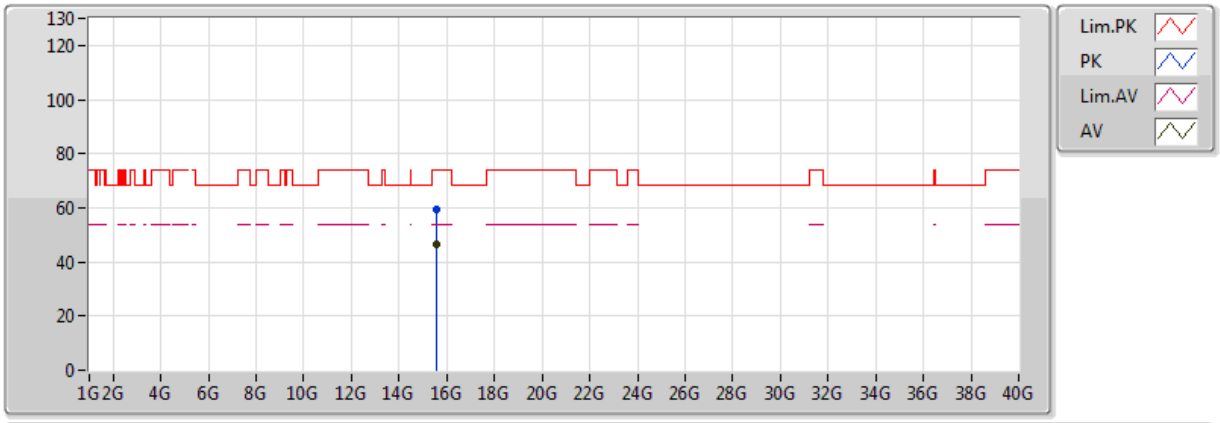


20171018
EUT Y_3TX(Dipole)
Setting 13
03-W-3-10
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.149995G	53.97	54.00	-0.03	5.93	3	Vertical	318	1.45
AV	5.1916G	102.69	Inf	-Inf	5.96	3	Vertical	318	1.45
PK	5.149995G	65.92	74.00	-8.08	5.93	3	Vertical	318	1.45
PK	5.1916G	112.19	Inf	-Inf	5.96	3	Vertical	318	1.45

802.11ac VHT40_Nss1,(MCS0)_3TX

5190MHz_TX

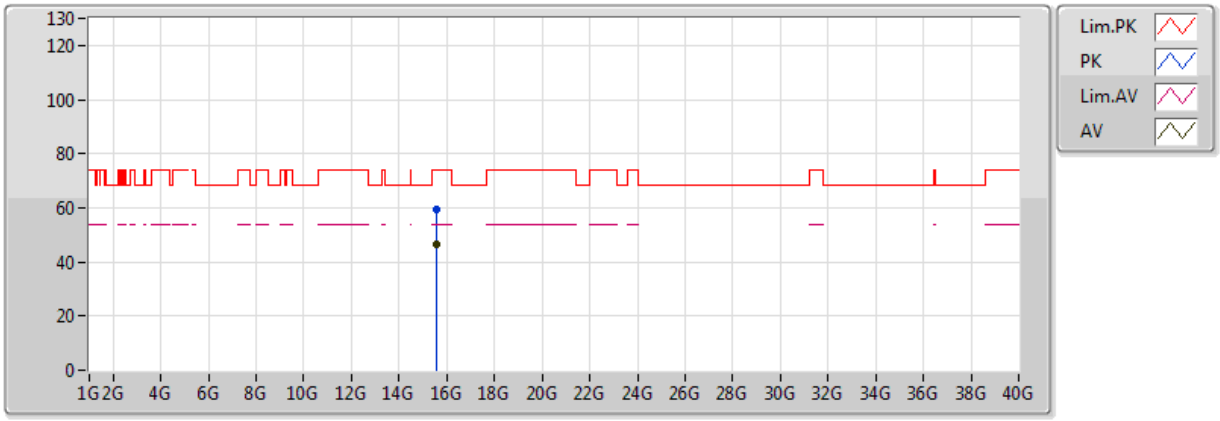


20171018
EUT Y_3TX(Dipole)
Setting 13
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.571G	46.54	54.00	-7.46	16.19	3	Vertical	23	2.27
PK	15.56452G	59.49	74.00	-14.51	16.21	3	Vertical	23	2.27

802.11ac VHT40_Nss1,(MCS0)_3TX

5190MHz_TX

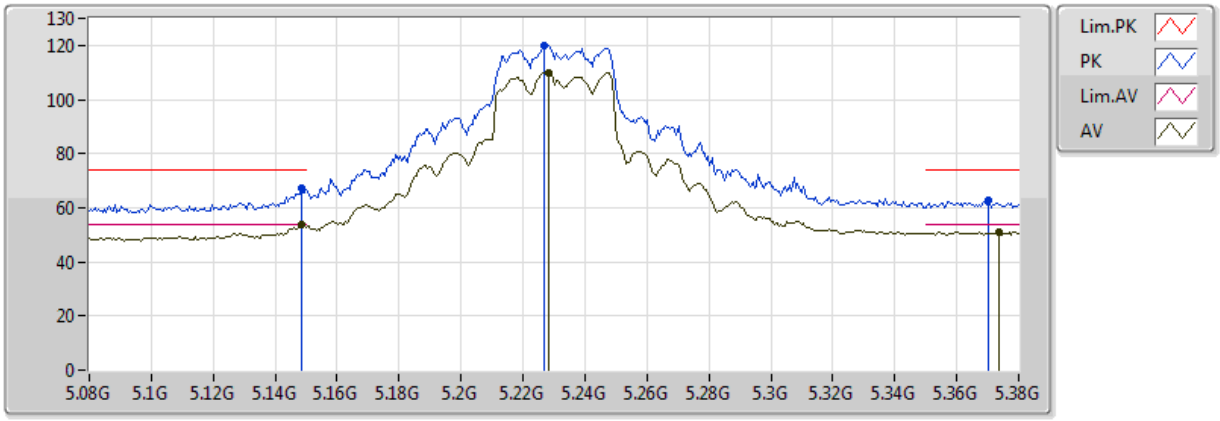


20171018
EUT Y_3TX(Dipole)
Setting 13
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.57952G	46.70	54.00	-7.30	16.15	3	Horizontal	69	1.37
PK	15.57076G	59.21	74.00	-14.79	16.19	3	Horizontal	69	1.37

802.11ac VHT40_Nss1,(MCS0)_3TX

5230MHz_TX

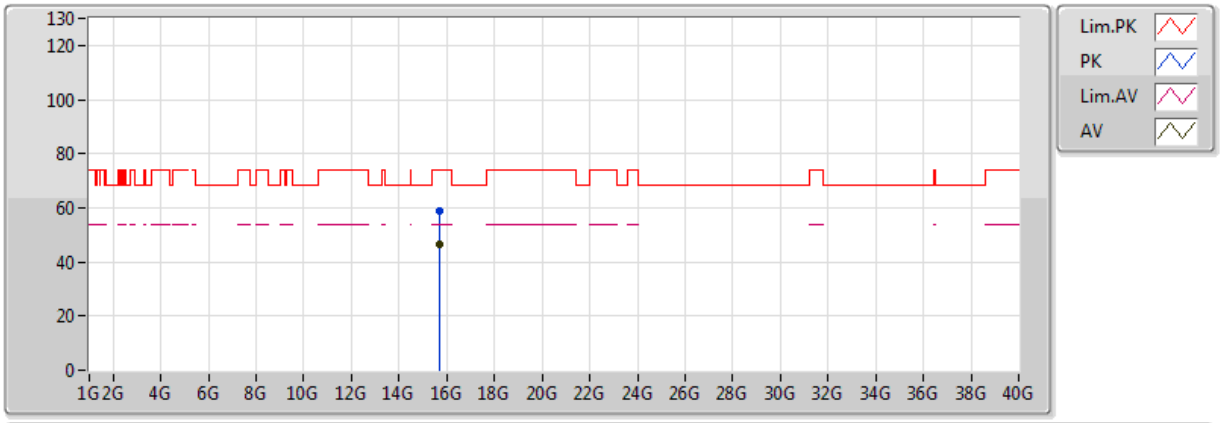


20171018
EUT Y_3TX(Dipole)
Setting 23
03-W-3-10
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.1484G	53.70	54.00	-0.30	5.93	3	Vertical	127	1.50
AV	5.2282G	110.10	Inf	-Inf	6.05	3	Vertical	127	1.50
AV	5.3734G	51.23	54.00	-2.77	6.45	3	Vertical	127	1.50
PK	5.1484G	67.02	74.00	-6.98	5.93	3	Vertical	127	1.50
PK	5.227G	120.19	Inf	-Inf	6.05	3	Vertical	127	1.50
PK	5.3704G	62.98	74.00	-11.02	6.45	3	Vertical	127	1.50

802.11ac VHT40_Nss1,(MCS0)_3TX

5230MHz_TX

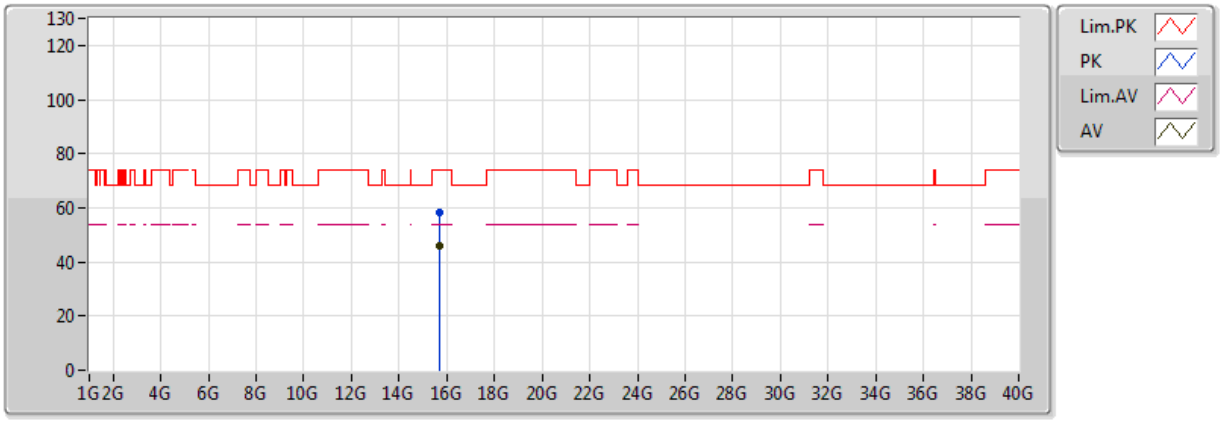


20171018
EUT Y_3TX(Dipole)
Setting 23
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.68966G	46.32	54.00	-7.68	15.74	3	Vertical	32	1.38
PK	15.68918G	58.99	74.00	-15.01	15.75	3	Vertical	32	1.38

802.11ac VHT40_Nss1,(MCS0)_3TX

5230MHz_TX

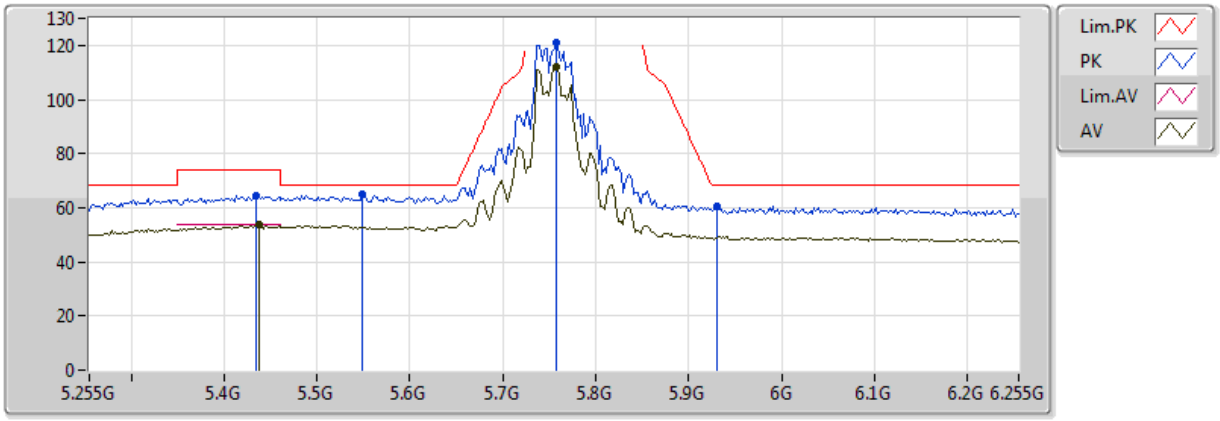


20171018
EUT Y_3TX(Dipole)
Setting 23
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.69146G	46.03	54.00	-7.97	15.74	3	Horizontal	254	1.96
PK	15.68662G	58.29	74.00	-15.71	15.76	3	Horizontal	254	1.96

802.11ac VHT40_Nss1,(MCS0)_3TX

5755MHz_TX

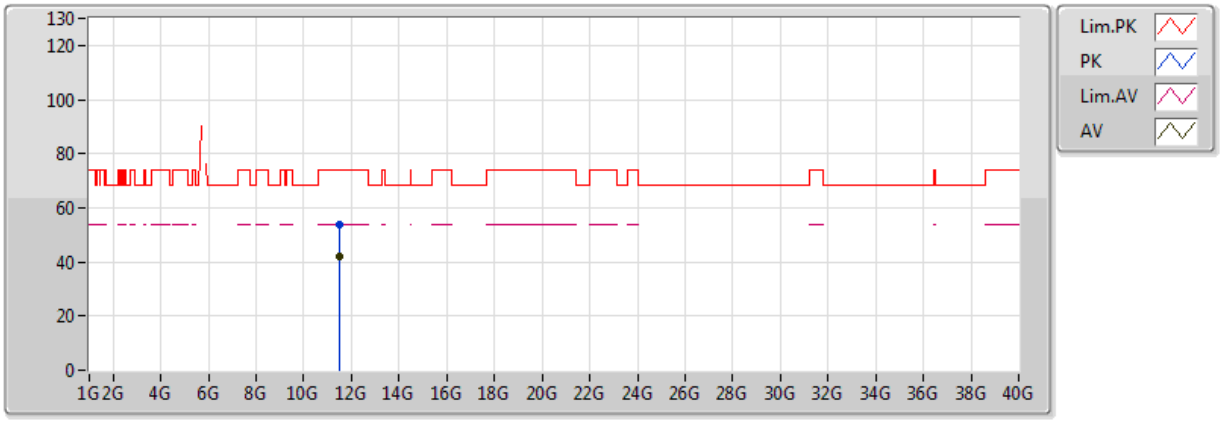


20171018
EUT Y_3TX(Dipole)
Setting 24
03-W-3-10
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.437G	53.98	54.00	-0.02	6.65	3	Vertical	35	1.80
AV	5.757G	112.12	Inf	-Inf	6.94	3	Vertical	35	1.80
PK	5.435G	64.38	74.00	-9.62	6.64	3	Vertical	35	1.80
PK	5.549G	65.27	68.20	-2.93	6.94	3	Vertical	35	1.80
PK	5.757G	120.86	Inf	-Inf	6.94	3	Vertical	35	1.80
PK	5.931G	60.26	68.20	-7.94	7.05	3	Vertical	35	1.80

802.11ac VHT40_Nss1,(MCS0)_3TX

5755MHz_TX

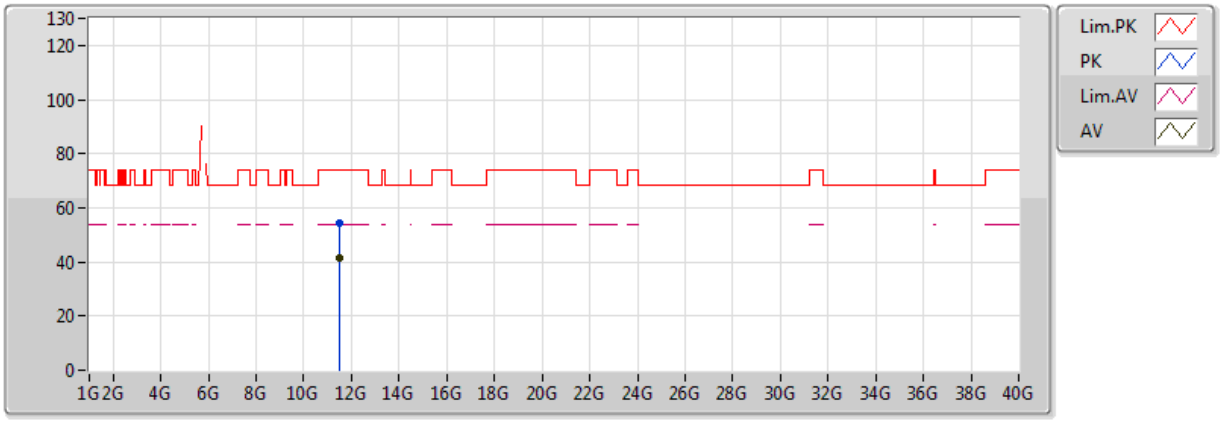


20171018
EUT Y_3TX(Dipole)
Setting 24
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.5052G	41.82	54.00	-12.18	13.94	3	Vertical	231	1.83
PK	11.50528G	54.05	74.00	-19.95	13.94	3	Vertical	231	1.83

802.11ac VHT40_Nss1,(MCS0)_3TX

5755MHz_TX

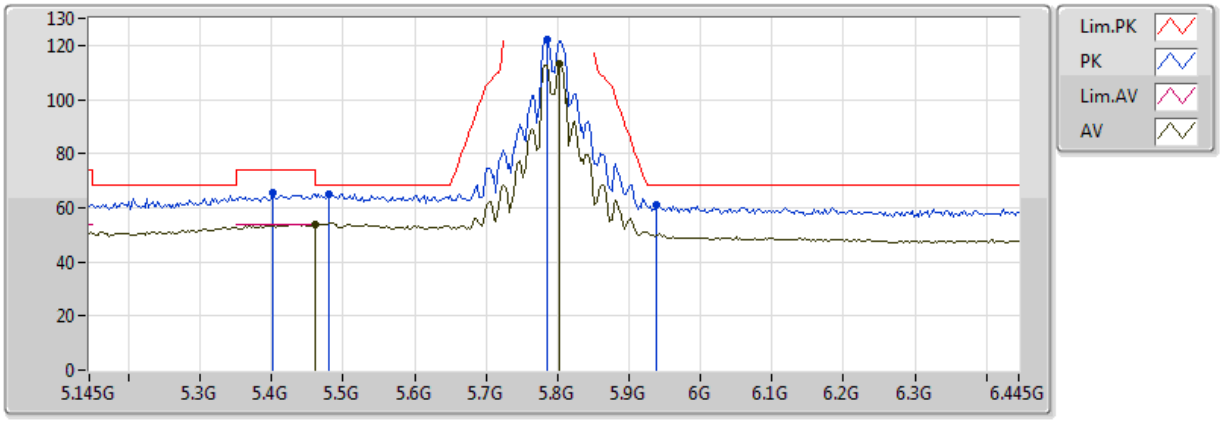


20171018
EUT Y_3TX(Dipole)
Setting 24
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.51292G	41.50	54.00	-12.50	13.95	3	Horizontal	159	1.25
PK	11.51356G	54.10	74.00	-19.90	13.95	3	Horizontal	159	1.25

802.11ac VHT40_Nss1,(MCS0)_3TX

5795MHz_TX

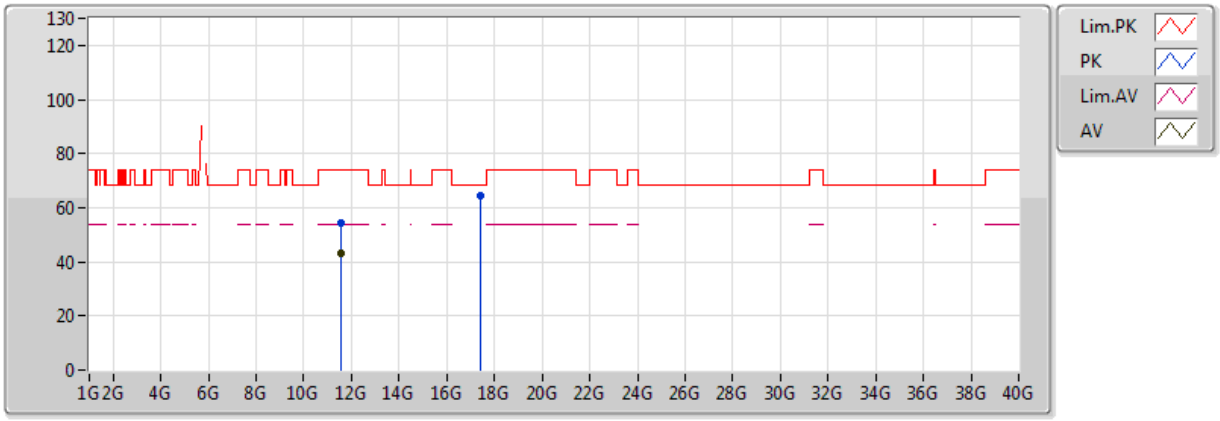


20171018
EUT Y_3TX(Dipole)
Setting 26
03-W-3-10
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.459995G	53.96	54.00	-0.04	6.72	3	Vertical	317	1.65
AV	5.8028G	112.93	Inf	-Inf	6.91	3	Vertical	317	1.65
PK	5.4024G	65.29	74.00	-8.71	6.53	3	Vertical	317	1.65
PK	5.4804G	65.20	68.20	-3.00	6.79	3	Vertical	317	1.65
PK	5.7846G	121.96	Inf	-Inf	6.92	3	Vertical	317	1.65
PK	5.938G	61.34	68.20	-6.86	7.06	3	Vertical	317	1.65

802.11ac VHT40_Nss1,(MCS0)_3TX

5795MHz_TX

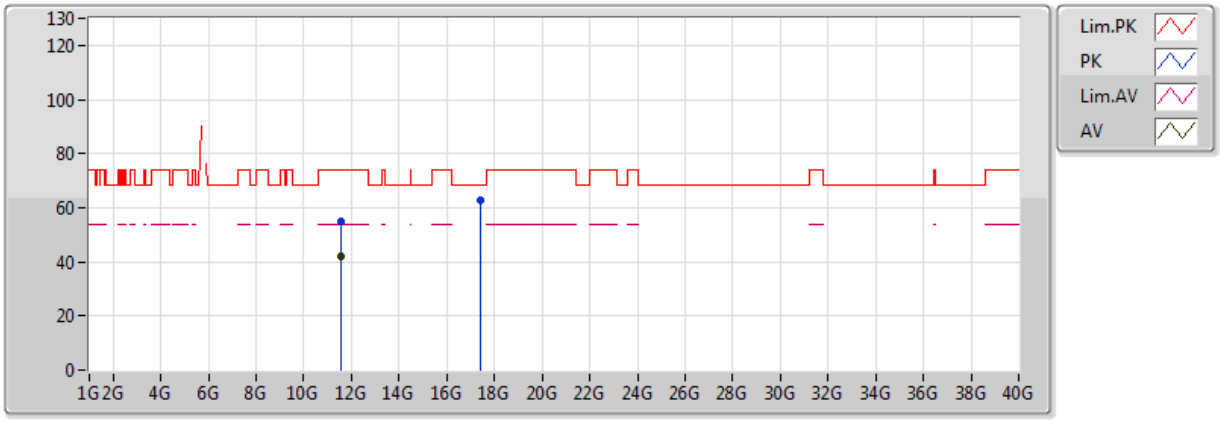


20171018
EUT Y_3TX(Dipole)
Setting 26
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.58852G	42.89	54.00	-11.11	14.01	3	Vertical	345	1.94
PK	11.58808G	54.51	74.00	-19.49	14.01	3	Vertical	345	1.94
PK	17.3849G	64.24	68.20	-3.96	19.38	3	Vertical	12	2.86

802.11ac VHT40_Nss1,(MCS0)_3TX

5795MHz_TX

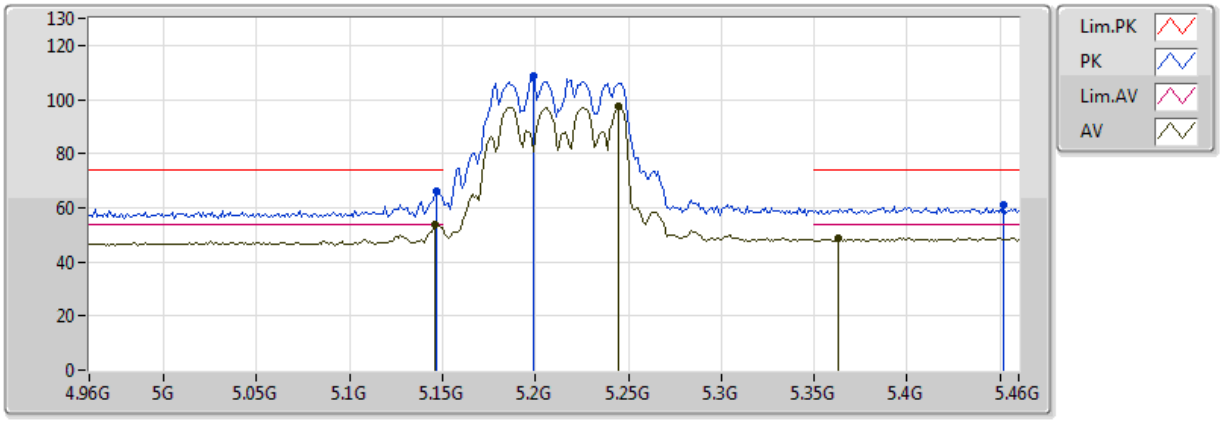


20171018
EUT Y_3TX(Dipole)
Setting 26
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.59198G	42.25	54.00	-11.75	14.02	3	Horizontal	52	2.31
PK	11.58946G	54.75	74.00	-19.25	14.01	3	Horizontal	52	2.31
PK	17.38466G	63.01	68.20	-5.19	19.38	3	Horizontal	42	2.95

802.11ac VHT80_Nss1,(MCS0)_3TX

5210MHz_TX

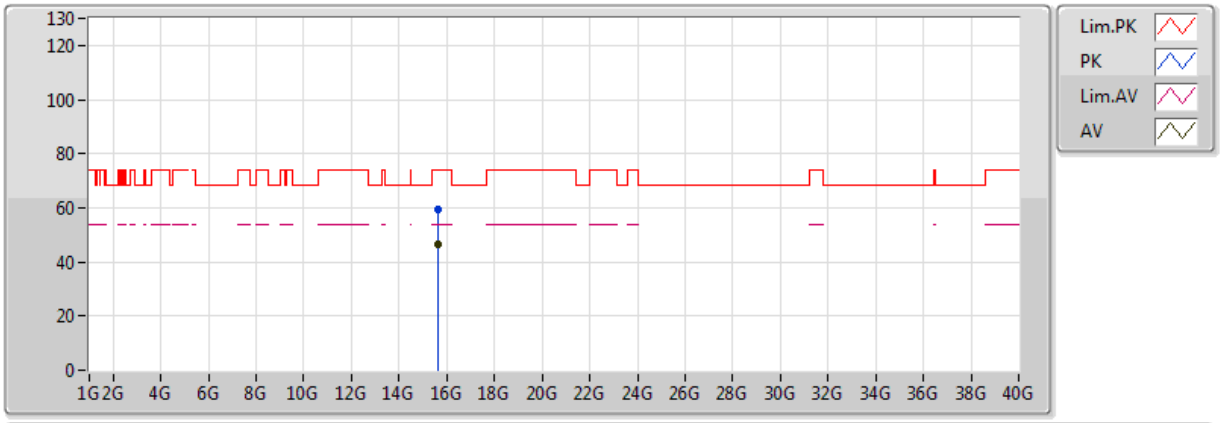


20171018
EUT Y_3TX(Dipole)
Setting 11
03-W-3-10
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.146G	53.81	54.00	-0.19	5.93	3	Vertical	306	1.48
AV	5.245G	97.31	Inf	-Inf	6.11	3	Vertical	306	1.48
AV	5.363G	48.69	54.00	-5.31	6.43	3	Vertical	306	1.48
PK	5.147G	66.18	74.00	-7.82	5.93	3	Vertical	306	1.48
PK	5.199G	108.68	Inf	-Inf	5.97	3	Vertical	306	1.48
PK	5.452G	60.96	74.00	-13.04	6.70	3	Vertical	306	1.48

802.11ac VHT80_Nss1,(MCS0)_3TX

5210MHz_TX

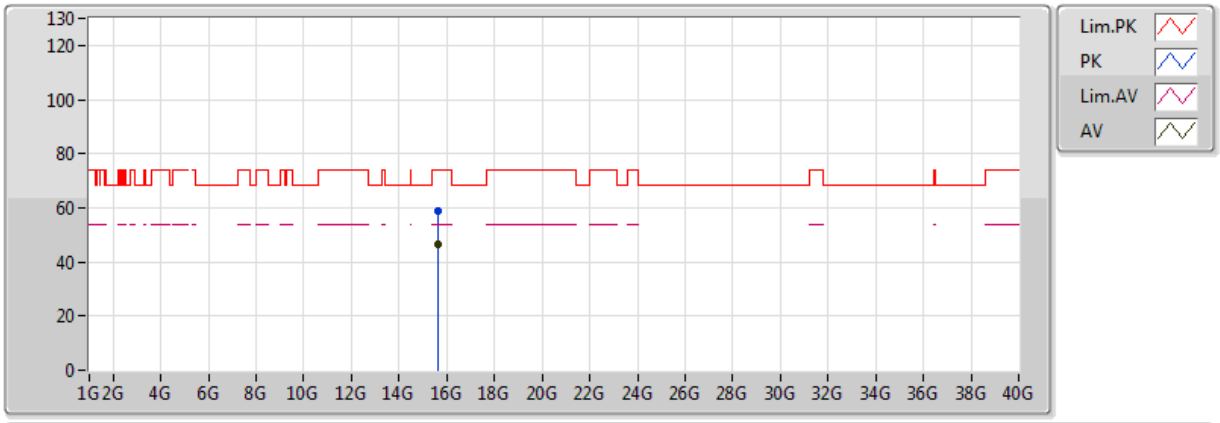


20171018
EUT Y_3TX(Dipole)
Setting 11
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.63166G	46.71	54.00	-7.29	15.96	3	Vertical	255	2.28
PK	15.6278G	59.49	74.00	-14.51	15.97	3	Vertical	255	2.28

802.11ac VHT80_Nss1,(MCS0)_3TX

5210MHz_TX

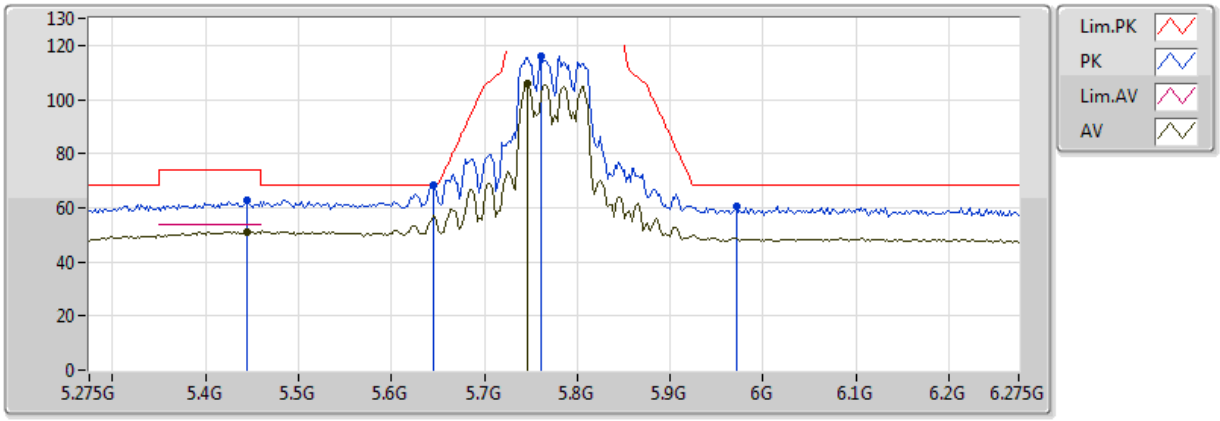


20171018
EUT Y_3TX(Dipole)
Setting 11
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	15.62928G	46.66	54.00	-7.34	15.97	3	Horizontal	90	2.36
PK	15.62921G	58.80	74.00	-15.20	15.97	3	Horizontal	90	2.36

802.11ac VHT80_Nss1,(MCS0)_3TX

5775MHz_TX

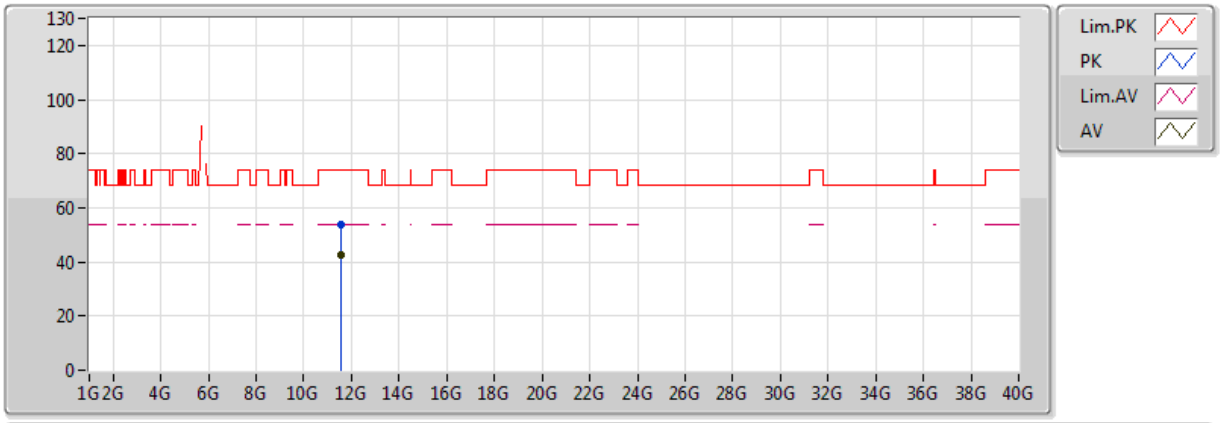


20171018
EUT Y_3TX(Dipole)
Setting 19
03-W-3-10
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	5.445G	51.22	54.00	-2.78	6.67	3	Vertical	32	1.80
AV	5.747G	106.01	Inf	-Inf	6.94	3	Vertical	32	1.80
PK	5.445G	62.52	74.00	-11.48	6.67	3	Vertical	32	1.80
PK	5.645G	68.17	68.20	-0.03	7.00	3	Vertical	32	1.80
PK	5.761G	116.12	Inf	-Inf	6.93	3	Vertical	32	1.80
PK	5.971G	60.59	68.20	-7.61	7.10	3	Vertical	32	1.80

802.11ac VHT80_Nss1,(MCS0)_3TX

5775MHz_TX

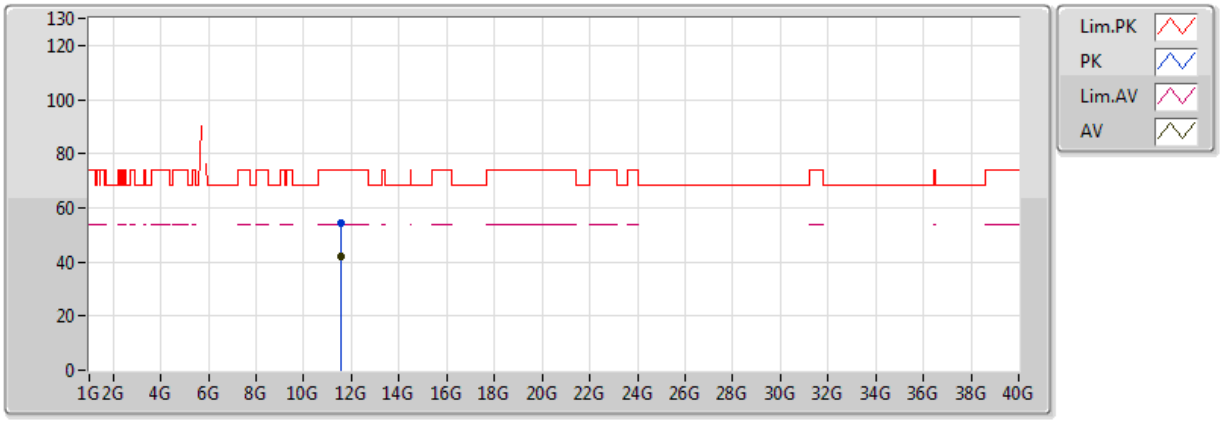


20171018
EUT Y_3TX(Dipole)
Setting 19
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.55164G	42.35	54.00	-11.65	13.98	3	Vertical	315	1.48
PK	11.54778G	54.04	74.00	-19.96	13.98	3	Vertical	315	1.48

802.11ac VHT80_Nss1,(MCS0)_3TX

5775MHz_TX



20171018
EUT Y_3TX(Dipole)
Setting 19
03-W-3
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)
AV	11.55084G	42.17	54.00	-11.83	13.98	3	Horizontal	182	1.75
PK	11.54672G	54.47	74.00	-19.53	13.98	3	Horizontal	182	1.75

Mode: 20 MHz / Ant. 2

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5199.9799	5199.9798	5199.9793	5199.9790
110.00	5199.9795	5199.9794	5199.9788	5199.9778
93.50	5199.9793	5199.9790	5199.9782	5199.9777
Max. Deviation (MHz)	**0.0207**	**0.0210**	**0.0218**	**0.0223**
Max. Deviation (ppm)	**3.98**	**4.04**	**4.19**	**4.29**
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5199.9806	5199.9804	5199.9797	5199.9790
10	5199.9796	5199.9787	5199.9780	5199.9774
20	5199.9795	5199.9786	5199.9784	5199.9780
30	5199.9788	5199.9783	5199.9777	5199.9768
40	5199.9770	5199.9767	5199.9763	5199.9758
Max. Deviation (MHz)	**0.0230**	**0.0233**	**0.0237**	**0.0242**
Max. Deviation (ppm)	**4.42**	**4.48**	**4.56**	**4.65**
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5784.9799	5784.9796	5784.9793	5784.9785
110.00	5784.9795	5784.9788	5784.9779	5784.9773
93.50	5784.9794	5784.9791	5784.9781	5784.9772
Max. Deviation (MHz)	**0.0206**	**0.0212**	**0.0221**	**0.0228**
Max. Deviation (ppm)	**3.56**	**3.66**	**3.82**	**3.94**
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5784.9813	5784.9810	5784.9804	5784.9802
10	5784.9804	5784.9799	5784.9796	5784.9795
20	5784.9795	5784.9785	5784.9780	5784.9779
30	5784.9788	5784.9782	5784.9781	5784.9773
40	5784.9777	5784.9776	5784.9771	5784.9764
Max. Deviation (MHz)	**0.0223**	**0.0224**	**0.0229**	**0.0236**
Max. Deviation (ppm)	**3.85**	**3.87**	**3.96**	**4.08**
Result	Pass			

Mode: 40 MHz / Ant. 2

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5189.9800	5189.9790	5189.9785	5189.9775
110.00	5189.9795	5189.9787	5189.9781	5189.9774
93.50	5189.9786	5189.9782	5189.9779	5189.9772
Max. Deviation (MHz)	**0.0214**	**0.0218**	**0.0221**	**0.0228**
Max. Deviation (ppm)	**4.12**	**4.20**	**4.26**	**4.39**
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5189.9819	5189.9817	5189.9816	5189.9809
10	5189.9808	5189.9806	5189.9799	5189.9794
20	5189.9795	5189.9793	5189.9790	5189.9787
30	5189.9788	5189.9784	5189.9776	5189.9768
40	5189.9772	5189.9767	5189.9764	5189.9754
Max. Deviation (MHz)	**0.0228**	**0.0233**	**0.0236**	**0.0246**
Max. Deviation (ppm)	**4.39**	**4.49**	**4.55**	**4.74**
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5754.9804	5754.9795	5754.9791	5754.9787
110.00	5754.9795	5754.9787	5754.9783	5754.9778
93.50	5754.9794	5754.9786	5754.9778	5754.9774
Max. Deviation (MHz)	**0.0206**	**0.0214**	**0.0222**	**0.0226**
Max. Deviation (ppm)	**3.58**	**3.72**	**3.86**	**3.93**
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5754.9820	5754.9814	5754.9812	5754.9805
10	5754.9800	5754.9794	5754.9785	5754.9783
20	5754.9795	5754.9792	5754.9791	5754.9782
30	5754.9788	5754.9784	5754.9783	5754.9777
40	5754.9787	5754.9781	5754.9771	5754.9764
Max. Deviation (MHz)	**0.0213**	**0.0219**	**0.0229**	**0.0236**
Max. Deviation (ppm)	**3.70**	**3.81**	**3.98**	**4.10**
Result	Pass			

Mode: 80 MHz / Ant. 2

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5209.9805	5209.9804	5209.9800	5209.9790
110.00	5209.9795	5209.9793	5209.9790	5209.9787
93.50	5209.9790	5209.9787	5209.9784	5209.9775
Max. Deviation (MHz)	**0.0210**	**0.0213**	**0.0216**	**0.0225**
Max. Deviation (ppm)	**4.03**	**4.09**	**4.15**	**4.32**
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5209.9826	5209.9825	5209.9824	5209.9823
10	5209.9813	5209.9807	5209.9806	5209.9803
20	5209.9795	5209.9787	5209.9777	5209.9769
30	5209.9788	5209.9784	5209.9775	5209.9774
40	5209.9768	5209.9760	5209.9750	5209.9742
Max. Deviation (MHz)	**0.0232**	**0.0240**	**0.0250**	**0.0258**
Max. Deviation (ppm)	**4.45**	**4.61**	**4.80**	**4.95**
Result	Pass			

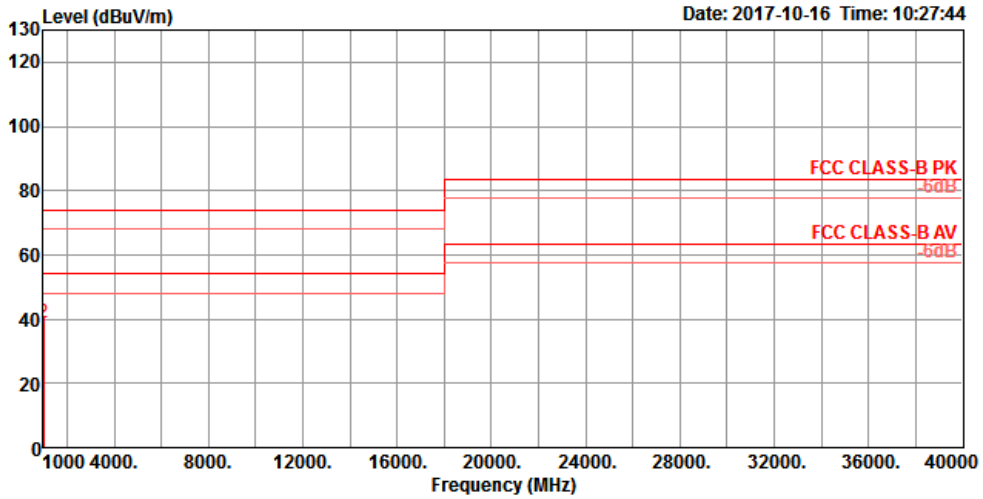
Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5774.9804	5774.9797	5774.9794	5774.9784
110.00	5774.9795	5774.9789	5774.9787	5774.9786
93.50	5774.9789	5774.9788	5774.9782	5774.9775
Max. Deviation (MHz)	**0.0211**	**0.0212**	**0.0218**	**0.0225**
Max. Deviation (ppm)	**3.65**	**3.67**	**3.77**	**3.90**
Result	Pass			

Temperature vs. Frequency Stability

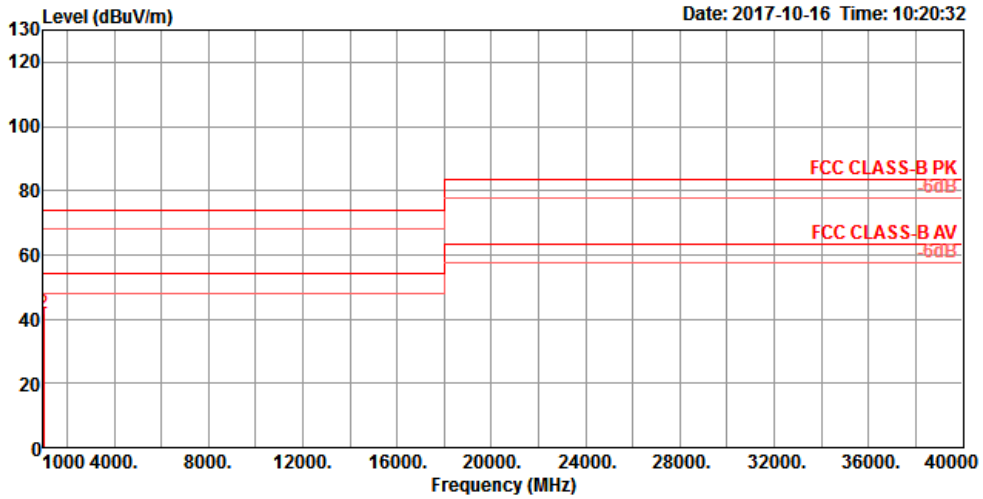
Temperature	Measurement Frequency (MHz)			
(℃)	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5774.9813	5774.9806	5774.9803	5774.9796
10	5774.9808	5774.9800	5774.9793	5774.9783
20	5774.9795	5774.9787	5774.9779	5774.9777
30	5774.9788	5774.9781	5774.9777	5774.9767
40	5774.9779	5774.9778	5774.9769	5774.9762
Max. Deviation (MHz)	**0.0221**	**0.0222**	**0.0231**	**0.0238**
Max. Deviation (ppm)	**3.83**	**3.84**	**4.00**	**4.12**
Result	Pass			

RSE Co-location Result			
Operating Mode	1	**Polarization**	Horizontal
Operating Function	Normal Link / EUT in Y axis - WLAN 2.4GHz +WLAN 5GHz		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1000.00	34.96	54.00	-19.04	45.18	3.46	23.70	37.38	100	313	Average	HORIZONTAL
2	1000.02	39.08	74.00	-34.92	49.30	3.46	23.70	37.38	100	313	Peak	HORIZONTAL

RSE Co-location Result			
Operating Mode	1	**Polarization**	Vertical
Operating Function	Normal Link / EUT in Y axis - WLAN 2.4GHz +WLAN 5GHz		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1000.00	38.08	54.00	-15.92	48.30	3.46	23.70	37.38	237	290	Average	VERTICAL
2	1000.12	41.68	74.00	-32.32	51.90	3.46	23.70	37.38	237	290	Peak	VERTICAL